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ABSTRACT

This study focuses on determining the relationship between communication apprehension and factors of student success for first-semester community college students. It specifically examined the relationship between levels of students' communication apprehension as determined by the Personal Report of Communication Apprehension, and indicators of student success as measured by grade point average (GPA), class completion, and persistence to enroll the next semester. The study's results pointed to variables that indicated student success. One analysis identified variables that predict academic performance as measured by GPA. It found that completion ratio, age, and gender were significant in explaining approximately 25% of the variance of academic performance. A second analysis identified variables that predicted persistence as measured by enrollment in the subsequent semester. It found that completion ratio, GPA, and age were significant in explaining approximately 80% of the variance of persistence. There was no indication of a significant relationship between communication apprehension and any of the academic or demographic variables. This finding contradicted some studies performed at four-year institutions. It is recommended that further studies of communication apprehension be pursued that specifically take into consideration the activities and processes used by an institution. (Contains 16 tables, four illustrations, one appendix, and 112 references.) (Author/KP)

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ED 457 939

THE RELATIONSHIP BETWEEN COMMUNICATION APPREHENSION AND COMMUNITY COLLEGE STUDENT SUCCESS

A Dissertation
presented to
the Faculty of the Graduate School
University of Missouri-Columbia

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

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by
JAMES D. EVERETT

Dr. Steven W. Graham. Dissertation Supervisor

DECEMBER 1999

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THE RELATIONSHIP BETWEEN COMMUNICATION APPREHENSION AND COMMUNITY COLLEGE STUDENT SUCCESS

presented by James D. Everett

a candidate for the degree of Doctor of Education

and hereby certify that in their opinion it is worthy of acceptance.

Steve Graham

Gary Pike

Blake Danuser

Richard Hatley

Bob Stewart

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ABSTRACT

Purpose. The purpose of this study was to determine the relationship between communication apprehension and factors of student success for first-semester community college students. Specifically, this study was to determine the relationship between levels of students' communication apprehension as determined by the Personal Report of Communication Apprehension, the PRCA-24, and indicators of student success as measured by GPA, completion of classes, and persistence to enroll in the next semester.

Methodology. The PRCA-24 instrument was provided to students during pre-enrollment activities conducted for the fall 1998 semester and during the first few weeks of that semester. This communication apprehension data along with student demographic information, pre-enrollment assessments, GPA, hours attempted and completed, and reenrollment (persistence) information were collected and analyzed. The analyses used bivariate Pearson's correlation, analysis of variance, multiple regression, and discriminant function analysis.

Results. The results of the study pointed to variables that indicated student success. One analysis identified variables that predict academic performance as measured by GPA. It was found that (a) completion ratio, (b) age, and (c) gender were significant in explaining approximately 25% of the variance of the academic performance variable.

A second analysis identified variables that predicted who would persist and those who would not persist by reenrolling in the subsequent semester. These predictor

variables included (a) completion ratio, (b) GPA, and (c) age. Using these variables, the variate accounted for a correct prediction of over 80% of the cases in the sample.

There was no indication of a significant relationship between the communication apprehension and any of the academic or demographic variables. This contradicted some studies performed at four-year institutions.

Given that this study found no significance for communication apprehension in the questions studied and given the limitations of the sample and other parameters, further studies that take into consideration the activities and processes used by an institution are recommended. The data from this study suggest more complex, yet richer possibilities for encouraging student success. What initially appeared to be inconsistent with previous research may be found to be consistent with documented and documentable intervention strategies important for all students in higher education.

This study does offer the possibility that the student support strategies practiced by many community colleges may be addressing issues not previously identified. The community colleges' strategies may have been created to solve a particular problem or need not widely recognized as related to communication apprehension, yet are now serving to ameliorate that same communication apprehension. These practices may have important potential for all institutions of higher education.

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CHAPTER I

BACKGROUND TO THE STUDY

Community colleges are a significant portion of the delivery system for higher education in the United States today. Within higher education in the United States community colleges enroll 44% of all undergraduates including 42% of all first-time freshman students, 45% of all African American students, 52% of all Hispanic students, 44% of all Asian/Pacific Islander students, and 56% of all Native American students (National Community College Snapshot, 1997). It is one of the obligations of the leaders within institutions of higher education to determine the methods, strategies, and systems which encourage, support, measure, and improve student success for individual students within that institution.

To complicate the issue of measuring progress, student outcomes are difficult to assess and document. Voorhees (1997) pointed out that student learning is neither necessarily dependent upon nor adequately described by academic certification or a certain grade point average. Studies have depicted outcomes by focusing in terms of earning degrees and certificates, grades, persistence, cognitive development, intellectual confidence, or critical thinking (Livengood, 1992; Pace, 1979; Voorhees 1997). However, Pace (1979) recommended a larger measure of student learning including indicators of general education, specific content, and integration of knowledge, attitude, and action. Some studies have focused on the outcomes of post-degree occupational status, earnings, job stability, and satisfaction (Smart & Ethington, 1985; Whitaker & Pascarella, 1994).

For a student to gain the benefits of higher education, the student must participate and progress through the higher education system.

Studies of persistence among students in all institutions of higher education indicate significant rates of withdrawal prior to successful completion of degrees. For students attending community colleges the rate is higher than in four-year institutions (Dougherty, 1994). Some reports from community colleges reveal dropout rates in excess of 50% from one semester to the next (Fralick, 1993; Levitz & Noel, 1991). Other studies have indicated low academic achievement for many community college students (Dougherty, 1994; Grubb, 1991).

Pursuit of understanding about the influences that affect non-persistence and low academic achievement is especially critical to community colleges. It is critical because the role and nature of the community college provide for a student body that includes disproportionally large number of first-time students who exhibit characteristics consistent with non-persistence and low achievement. For example, community colleges enroll disproportionally more students with a lower high school GPA and students who matriculate to higher education more than one year after high school graduation than do four-year institutions (Voorhees, 1997). Community colleges also have higher proportions of lower economic level of students and older students (Dougherty, 1994). Austin (1985) found that many new college students, including community college students, do not become adequately involved in higher education, which can lead to consequences in terms of performance and persistence. Therefore, to increase success for

students in higher education, identification and targeted intervention for those students most at risk of non-persistence and low academic achievement is important.

Identification of student characteristics that have a relationship with persistence and academic achievement has been the focus of many studies. However, many of these studies are either focused primarily on four-year college students or assume that the two-year college students being studied are in college for the purpose of a four-year degree and study success in terms of baccalaureate achievement (Voorhees, 1997). However, for many students in community colleges a baccalaureate degree may not be a goal (Pascarella, Bohr, Nora, & Terenzini, 1995; Voorhees, 1987). The rising number of non-traditional students in the community colleges whose goals do not include transfer aspirations or a baccalaureate degree decreases the usefulness of these types of studies for community college leaders.

An institution's pursuit of increased success among students is a worthy endeavor. What is not clear, however, is whether the community colleges can accurately identify students who are at-risk of poor academic achievement or non-persistence. For example, in one study by Kanoy, Wester, and Latta (1989) it was noted that the traditional predictors of student success such as SAT scores and high school GPA scores were not useful in predicting second-semester academic achievement of students who were expected to be the lower-achievers.

Community colleges have attempted many strategies to help students in need and to promote student success. Some comprehensive strategies are applied to all students without regard to any specific, identified deficiencies. These comprehensive strategies

include planning, mandatory orientation, and student assessment for all enrollees (Carroll & Tarasuk, 1991; Kingan & Alfred, 1993). Targeted strategies are recommended to students once a problem appears or when a student self-selects available assistance. These targeted strategies include student and/or faculty mentoring, additional instruction through technological assistance, counselor contact, small group assistance, and combination strategies (Brawer, 1996; Crump & Dudley, 1996; Hankin, 1996; McCaffey & Miller, 1980; O'Banion, 1994b). While all of these strategies have experienced one degree of success or another, additional focus and relevant information can provide additional guidance and assistance to leaders of community colleges in their pursuit of supporting student success.

Even with the use of comprehensive and targeted strategies, substantial withdrawal by students from community colleges remains. Support for students must happen as early as possible. In one study it was found that of the students who withdrew from college, over 70% first entertained the thought of leaving within the first four weeks of their first semester and over 80% of the 70% had no contact with any instructor about this decision. Further, most of these non-persisting students studied alone and never became involved with the college (Kangas, 1991). Cohen and Brawer (1996, p. 64) reported data from the National Center for Education Statistics in 1994 that of the students "...leaving by the end of their first year, 39% indicated they had never participated in a study group, 34% had never socialized with faculty or advisors, and 45% had never spoken with faculty outside of class." These voids in communication and

involvement may point community colleges leaders to areas where additional support and/or intervention can benefit students.

Several studies have researched methods to increase retention at community colleges by various means including increasing contact between counselors and faculty (McCaffey & Miller, 1980) and through student orientations (Drew, 1990). In more than one study communication apprehension (CA) has shown a significant relationship to college persistence (Booth-Butterfield & Thomas, 1995; Hamilton & Frerichs, 1996; McCroskey, Booth-Butterfield, & Payne, 1989). However, the communication apprehension studies have not concentrated exclusively on community college students. The problem posed in this study is to determine if significant and meaningful relationships exist at community colleges between CA and factors of student success.

Statement of the Problem

The present study pursued information on the critical need for community colleges to support student success. Community colleges are open door institutions and, therefore, attract a very diverse student body when compared to four-year institutions. Because significant numbers of students do not persist beyond one or two semesters, it is critical for community colleges to identify as early as possible those students who are unlikely to experience success and continue their education. This study sought to provide relevant information to the issue of an institution's ability to be proactive, responsive, and supportive so the individual student is more likely to be successful at meeting her or his educational goal(s).

It is important for community college leaders to support individuals in their approach and transition to the higher education learning community. Areas that raise the level of student apprehension or promote a reluctance to become involved and engaged are potential targets of intervention by colleges. Support that is provided to individual students is especially significant during the early stages of the college experience which is an unstable transition phase, that is, a movement from membership in one group to membership in another (Tinto, 1988). Students with apprehension or a reluctance to engage in verbal discourse with others are at a disadvantage. Studies have found individuals with high CA interact less often with strangers, are more apt to be socially isolated, are regarded less positively, and have fewer friends (Daly, 1991). Also, Frymier (1993) found that motivation to study was less evident for students with high CA. "We live in an educational world where orality is seen as a necessary, positive personal characteristic. Communication apprehensive students, through years of veiled discrimination, must feel the impact of this bias in a series of significant, long-lasting consequences. Over time, the system they are part of regularly discriminates against them" (Daly, 1991, p. 7).

Purpose of the Study

The purpose of this study was to determine the relationship between communication apprehension and factors of student success for first-semester community college students. Specifically, this study was to determine the relationship between levels of students' communication apprehension as determined by the Personal Report of Communication Apprehension, the PRCA-24 (McCroskey, 1978) and indicators of

student success as measured by GPA, completion of classes, and persistence to enroll in the next semester.

James C. McCroskey advanced the construct of communication apprehension (CA) as "...a broadly based anxiety related to oral communication..." (1970, p. 270). McCroskey (1984a, p. 13) continued refining the construct and it is now described as, "...an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons." Initially, the concept of CA did not receive universal acceptance; Porter (1979) stated that sufficient replication and scrutiny of CA had not yet occurred. However, in refutation of Porter's concerns, additional and more recent research has shown construct validity for CA (Beatty & Payne, 1985; Greene & Sparks, 1983; Leary, 1983; McCroskey, 1982; McCroskey, Beatty, Kearney, & Plax, 1985; McCroskey, Booth-Butterfield, & Payne, 1989).

Communication apprehension is estimated to affect somewhere between 14 and 20% of the population (Ayres & Hopf, 1993; Richmond & McCroskey, 1985). Studies have identified connections between high levels of CA and higher rates of student withdrawal from higher education as well as a potentially important factor in influencing a person's choice of vocational pursuit (Booth-Butterfield & Thomas, 1995; Hamilton & Frerichs, 1996; Richmond & McCroskey, 1985). It is promising that several studies have shown success in interventions applied specifically to lower an individual's level of CA (Ayres, Ayres, & Hopf, 1995; Harris & Brown, 1982; Hawkins, 1992; Procter, Douglas, Garera-Izquierdo, & Wartman, 1994; Smith, 1993; Watson, 1987; Watson & Dodd, 1984).

Defining how apprehensive a person is when confronting or anticipating a situation requiring communication requires measurement instruments. McCroskey (1984b), in reviewing research involving self-report measures, observer ratings, and measurements of physiological arousal; found that "Self report measures are the most useful for measuring communication apprehension" (p. 86). Further, Daly (1991) also found that self reports are the most common method of measuring CA and that while several measures exist, the most commonly used instrument in the field of communication is by McCroskey, the 24 item Personal Report of Communication Apprehension (PRCA-24).

Importance of the Study

Institutions of higher education search for the improved structures and methodologies that not only maintain or improve educational quality, but also improve support for students to reach their goals. This study extended the existing set of information related to student success at community colleges.

The variables in this study are nearly universally applicable to community colleges across the country. Analysis of the variables identified relationships between an indicator of CA and indicators of student success for all first-semester students.

The results of this study may have value for any community college or comparable institution with open admissions policies. Identification of students with characteristics leading to decreased opportunity for student success at early stages of contact with higher education is important to assistance and intervention efforts.

The research design has provided information that could be meaningful to any open entry institution. These institutions are the ones working with proportionally higher numbers of vocational, non-traditional, and diverse populations.

Research Questions

1. Is there a relationship between the reported level of communication apprehension and the ASSET reading and writing assessment scores among first-semester community college students?
2. Is there a relationship between the reported level of communication apprehension and academic achievement among first-semester community college students?
3. Is there a relationship between the reported level of communication apprehension and completion of classes among first-semester community college students?
4. Is there a relationship between the reported level of student communication apprehension and persistence among first-semester community college students?
5. Is there some combination of academic student characteristics and an indicator of communications apprehension that can predict academic achievement?
6. Is there a combination of academic and demographic student characteristics that can predict student persistence?

Definition of Key Terms

Academic Achievement--the quantitative measure of students' cumulative performance in classes indicated by grade point average (GPA) or course grades

ASSET--scores in reading and writing developed from the ASSET assessment instrument as developed by the American College Testing Program.

Communication Apprehension--"an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1984a, p. 13).

Community College--any institution accredited to award the Associate in Arts or Associate in Science as its highest degree (Cohen & Brawer, 1996).

First-semester Student--a student enrolling in college classes for the first time.

Persistence--the result of action taken by a student to re-enroll for the subsequent semester.

Student Success--a combination of academic achievement and persistence.

CHAPTER II

REVIEW OF RELATED LITERATURE

Community Colleges include two-year public and private institutions under various names including junior, community, and technical. Over the years several definitions have been used to describe these institutions. In 1922 the American Association of Junior Colleges defined its members as institutions offering two years of instruction exclusively collegiate in nature. In 1931 junior colleges were described as branches of the universities where lower-division courses were offered. The definition used in this paper for all two year institutions is that from Cohen and Brawer (1996, p. 5) when they define community colleges as, "any institution accredited to award the Associate in Arts or Associate in Science as its highest degree."

While at least one community college existed in 37 states in 1922 (Cohen & Brawer, 1996), by 1957 only 377 public two-year colleges existed in total across the entire United States (Finifter, Baldwin, and Thelin, 1991). Now the U.S. has 1,036 publicly supported community colleges and 437 private community colleges (Chronicle of Higher Education, 1996).

In this chapter, community colleges and community college students are compared with four-year institutions and with students attending four-year institutions. Assessments, indicators of student success, and possible relationships to communication apprehension are reviewed.

Attributes of Community Colleges

Differences between community colleges and four-year institutions are more than just the types of degrees awarded. It was national educational policies that supported the creation of many universities. However, the growth of community colleges is due almost entirely to state educational policies, and governance of community colleges is typically a local issue with varying amounts of state coordination and control (Cohen, 1995; Finifter, Baldwin, & Thelin, 1991). Further, while research is a traditional focus of universities, community colleges focus on teaching and learning and have a commitment to occupational education (Dougherty, 1994; O'Banion, 1994a).

Community College Students vs. Four-Year College Students

The diversity of individuals who make up the community college student body is unique within institutions of higher education. While the community college student population for full-time students is mostly traditional and similar to that of four-year institutions, the average age of the community college student is near 30 years. The higher average age is due, in part, to part-time students who continue to contribute over 60% of the enrollment for community colleges. In community colleges, more part-time students are over 35 years of age than under 21 years of age (Cohen & Brawer, 1996; Community College Enrollment, 1995; Dougherty, 1994; Older Students in Community Colleges, 1995; Voorhees, 1997).

Community colleges now represent 44% of all undergraduate enrollments in institutions of higher education in the United States including 42% of all first-time freshman students, 45% of all African American students, 52% of all Hispanic students,

44% of all Asian/Pacific Islander students, and 56% of all Native American students (National Community College Snapshot, 1997). Community college students often reflect the general population of the community. One study described the students enrolled in community colleges as more representative of the general population than either students in four-year institutions or students who did not continue with postsecondary education at all (Adelman, 1992).

The student body of community colleges reflecting the community at large is due, in part, to the significant number of part-time enrollments which is unique in higher education. Some community colleges deliberately arrange classes to attract part-time students by holding classes on weekends, at off-campus sites such as businesses and senior citizen's institutes, and other arrangements that provide convenience. Other community college institutions such as the Community College of the Air Force, with over 300,000 students worldwide in 1994, count only 10% of its enrollment as full-time (Cohen & Brawer, 1996).

Unique Features of Community Colleges

Serving a diverse student constituency is one of the roles of community colleges. According to the ERIC Clearinghouse for Community Colleges (1995), most community colleges offer programs that include transfer (liberal arts), vocational (occupational), developmental (remedial), and community (personal interest) education. Griffith and Conner (1994) summarized the community college mission in five areas: (a) concentrate on the neglected first two years of college, (b) raise educational levels of under-prepared students, (c) educate and train students to be qualified, skilled workers, (d) re-educate

those whose skills are outdated, and (e) help those who have college degrees but no work skills. In accepting and serving students with a very diverse range of background characteristics, the community colleges are challenged to keep rigorous academic standards in ways not experienced by four-year institutions (Smittle, 1995).

Instructional faculty members in community colleges are also unique when compared with other institutions of higher education. Of the approximately 91,000 full-time faculty members who served in public community colleges in 1987, most are older than their university counterparts. While part-time faculty members at community colleges teach many more courses than are taught by part-time faculty members at four-year institutions, community colleges use graduate teaching assistants much less (Voorhees, 1997).

Summary of Attributes of Community Colleges

State and local initiatives, not federal policy, supported the origination and growth of community colleges. The focus of community colleges remains teaching and learning rather than research. A cross-section of community college students more closely reflects the community's demographics than do other types of higher education institutions, in part, due to the large number of part-time students. The community colleges include not only programs leading to transfer to four-year colleges, but also programs designed for vocational, developmental, and personal interest pursuits.

Assessment of Community College Students

Cohen (1994) noted that outcome assessments by community colleges have traditionally focuses on two areas. One involves surveys of the students after they leave

the institution. The other involves performance indicators at the institutions receiving community college students as transfer students.

Research by Alba and Lavin (1981), Dougherty (1994), Grubb (1991), and Whitaker and Pascarella (1994) have focused on comparison of students who begin higher education within two-year institutions compared with those who begin in four-year institutions. They determined that students who begin at two-year institutions are less likely to attain baccalaureate degrees and eventually report lower socioeconomic status when compared with students who enroll directly in four-year institutions. They conclude that some of the reasons include detrimental effects of the community college environment (Alba and Lavin, 1981), inferior preparation at the lower division level (Dougherty, 1994), and academically declining programs (Grubb, 1991).

Countering these conclusions are studies by Bohr, Pascarella, Nora, Zusman, Jacobs, Desler, and Bulakowski (1994), Pascarella, Bohr, Nora, and Terenzini (1995), and Voorhees (1987). These studies recognized that the goal of students entering two-year colleges may not be a baccalaureate degree. In fact, measuring community college students by persistence to degree completion, "may not be a valid measure of actual persistence behavior for community college students" (Voorhees, 1987, p. 116).

Further, when students matriculate to higher education more than one year following high school graduation, studies have shown that these students do not obtain baccalaureate degrees at the same rate as those who matriculate straight from high school. Community colleges enroll more of these delayed entry students than do four-year

colleges and universities (Voorhees, 1997) which may account for at least some of the discrepancies that exist in this area.

One title for higher education institutions that appears to be applied uniquely to community colleges and, therefore, the students who enroll in them is "occasional institutions." Community colleges appear to serve individuals for *ad hoc* purposes and "accommodates a variety of decisions to engage in intentional learning within a formal organization" (Adelman, 1992, p. 22).

With a unique mission, student body, and delivery mechanism, it is not possible to transfer results from research of four-year institutions directly to community colleges. The differences are just too great. Scholars from many areas of expertise view studies based on four-year institutions or students from four-year institutions as insufficient when policies and practices at community colleges need research-based rationale (Alba & Lavin, 1981; Bean & Metzner, 1985; Bohr, Pascarella, Nora, Zusman, Jacobs, Desler, Bulakowski, 1994; Hamilton & Frerichs, 1996; Voorhees, 1997).

Assessment, Orientation, and Counseling for Students at Community Colleges

Equal access to education, including higher education, is important to American society. Community colleges are generally open-access institutions and serve students with very diverse background characteristics. While all higher education institutions enroll a diverse array of students, this diversity is much greater in community colleges than it is in other institutions of higher education (Cohen & Brawer, 1996; Nielsen, 1991). The diverse nature of student applicants to community colleges means that some students will enter or attempt to enter community colleges with insufficient academic

preparation needed to attempt collegiate level work, insufficient plans to make good choices toward a cohesive academic plan, or both.

Because community colleges enroll students who would typically not be accepted at other institutions of higher education, many applicants to community college are in need of skills and assistance to succeed at collegiate levels. Unfortunately, many students who are in need of this assistance rarely volunteer to enroll in special classes offered for their benefit (Robertson & Fitzgerald, 1992). Burley (1994) conducted an analysis of studies directed toward community college developmental studies programs. He observed that with minor exceptions, the effects of these programs were positive, and that strong theoretical underpinnings in the developmental classes work better than modified versions of the regular college classes. Mandatory assessment of all entering students is becoming more prevalent and community colleges are searching for predictors of academic performance that will help them increase the success of their students, regardless of the students' goals (Smittle, 1995).

Summary of Assessment of Community College Students

The two traditional areas of focus on community college student assessment include post-departure surveys and performance indicators at receiving institutions. Some studies have concluded that community college students are at a disadvantage compared with students enrolling directly in a four-year institution. However, other studies recognize the divergent goals of many community college students, goals that may not include completion of four-year degrees and the fact that community colleges enroll disproportionately higher numbers of students with factors related to lower completion

rates such as delayed entry to higher education. Community colleges play a unique and important role in higher education as the opportunity of open-access to students with extremely diverse backgrounds. Because of these student characteristics, community colleges strive to support students in many ways including use of assessments and proactive intervention that may help promote student success.

Student Academic Achievement and Persistence

A range of factors motivates academic achievement and persistence for students in college. While it is not possible to identify all influencing factors, it is also not possible to intervene in all areas that can be identified (Smittle, 1995). For purposes of this paper, student success was determined by academic achievement and persistence. Academic achievement was indicated by GPA. Persistence was indicated by continued enrollment.

Academic achievement and persistence provide benefits to both the student and the institution. For students, academic achievement and persistence can assist attainment of goals in less time and cost (Dunwoody & Frank, 1995) as well as enhanced socioeconomic and occupational status in the future (Grubb, 1991; Sewell & Hauser, 1975; Whitaker & Pascarella, 1994). For the institutions, enhanced academic achievement and persistence of students can mean tangible benefits related to increased funding as well as intangible benefits such as constituent satisfaction and a closer realization of the college mission. Of course, institutional improvements impact students. For example, Pike (1991) found that academic satisfaction with the college and classes can have a direct influence on grades. Grades have been argued to be the most important

factor or at least a primary factor in the decision to remain in or drop out of college (Pascarella & Chapman, 1983; Tinto, 1975).

New methods of promoting academic achievement and persistence are of interest to nearly all institutions of higher education, a theme that is addressed in many research efforts. It is important to note that attrition tends to occur primarily in the first two years of higher education (Gilbert and Gomme, 1986). In fact it is most likely to occur during the freshman year or prior to the sophomore year (Mortenson, 1996) and nearly 50% of freshmen enrolled in colleges and universities leave the institution prior to completing their programs (Brawer, 1996). Research and assessment/diagnostic efforts must be used to the fullest extent to identify and assist at-risk students and enhance their chances for success.

Many studies have attempted to identify the different nature and characteristics of students. Some studies have tried to determine specific characteristics of students who complete their program of study versus the characteristics of those who do not (Brawer, 1996). Other studies found pursued the relationship between student characteristics and the program of study they have selected. For example, Booth-Butterfield & Thomas (1995) found students with high communication apprehension elected office administration (secretarial) programs more often than would otherwise have been expected.

Quantities of data have provided insight as to the characteristics of students enrolled in higher education and have focused on students' success through identifying those who persist or do not persist and achieve or do not achieve degrees as well as

employing strategies to benefit the students. Brawer (1996) and Mohammadi (1994) found part-time attendance to be a prevalent characteristic of non-persisters. This is supported by Fralick (1993) who found that 80% of non-persisters had enrolled in nine or less units the previous semester. In this study, persistence rates from one fall term to the next were as low as 42%. Graham (1987) found community college transfer students at one four-year institution had lower persistence rates than native students during the second and third terms, but not during the fourth term. Bers and Smith (1991) studied the influence of student academic and social integration on persistence for community college students. They found that educational objectives and employment status were significant factors as well as academic and social integration. This was supported by another study that found personal considerations and course considerations as primary reasons why students withdrew from classes (Dunwoody & Frank, 1995). Billson & Terry (1987), using the Student Retention Model based on work by Tinto (1975), Pascarella and Terenzini (1980), and others, found that early identification of academic, financial, or other problems were critical to effective student retention. Further, they found student involvement in campus life supported student persistence. Halpin (1990) and Smith (1994) studied freshmen persistence and found strong support for Tinto's model and the need to develop a sense of community for students attending community colleges. Kanoy, Wester, & Latta (1989) and Livengood (1992) found that early assessments and information about academic self-concept and perceptions of ability could assist counselors to help those at risk for non-persistence. Grunder & Hellmich (1996)

found college success programs had a positive impact on student academic performance and Burley (1994) found 66% of developmental studies programs helped students persist.

Academic Achievement

Academic achievement can mean many things. Quantifiable indicators of academic achievement have been used in many studies. GPA is the usual representation of quantifiable academic achievement, is a useful indicator of academic achievement, and is widely used in many studies. Further, it has been found that GPA, both high school and college, has strong relationships to persistence (Bean & Metzner, 1985; Campbell & Blakey, 1996; Grimes & Antworth, 1996; Metzner & Bean, 1987; Voorhees, 1997). In one study, college GPA was found useful in predicting the transfer and continuation of community college students to year three (Alba & Lavin, 1981). In another study, community college GPA was useful in predicting the GPA earned at the receiving institution (Graham & Hughes, 1994). Smittle (1995) found that a comprehensive model of high school GPA, college placement test scores, race, and gender was a statistically significant predictor of college GPA. Clark & Halpern (1993) concluded that GPA is a better indicator for underprepared students than for other students who entered college classes already knowing most or all of the material to be covered. Certainly GPA is one indicator of academic achievement that can be used to study the effects of communication anxiety.

Academic achievement and persistence in college has been significantly related to various factors. For example, status as a full-time student was determined to be an

important attribute (Brawer, 1996; Feldman, 1993 Moore, 1995; Windham, 1994). Also, Smittle (1995) identified high school grade point average and aptitude tests as commonly used predictive measures for college success. Another characteristic identified as important to success was age, though these studies have conflicting results. Feldman (1993) found students in the traditional age groups to have higher levels of attrition. Other researchers found higher attrition in the age groups beyond those characterizing the traditional college student (Mohammadi, 1994; Price, 1993).

In one study of students who had transferred from community colleges to a university, "it was puzzling to find that receipt of an associates degree, previous high school academic coursework, parents' educational background, and previous study habits were unrelated to academic performance at the senior institution" (Hughes & Graham, 1992, p. 42). Nonetheless, institutions will continue to pursue information and insights that will help them assist the retention of students.

Persistence in Higher Education

Persistence is measured by nearly all institutions. Students who may be at risk of dropping out need to be identified as early as possible. This is especially critical since attrition usually happens in the very first semesters of a student's higher education experience (Billson & Terry, 1987; Gilbert and Gomme, 1986) and in some cases before the end of the first semester (Hamilton & Frerichs, 1996).

Several studies have identified reasons for non-persisters. Grimes and Antworth (1996) identified categories associated with gender, health, family, marital, and emotional

factors. Dunwoody and Frank (1995) and Smittle (1995) identified both personal (non-academic) considerations and course (academic) considerations.

Persistence rates for the freshman to sophomore year range from 52.5% to 83%, depending on the type of postsecondary institution with public research institutions reporting the highest persistence and public community colleges reporting the lowest. When viewed from the perspective of institutional academic selectivity for admission, highly selective postsecondary institutions report persistence rates of about 91.3% while open institutions report persistence rates of approximately 54% from the freshman to sophomore year. A survey of high school graduates entering community colleges found that 42.6% did not have a degree four years later and had left higher education (Dougherty, 1994). For students entering four-year institutions in 1991, 47.2% had not received a bachelor's degree by summer 1996 (Proportion of Students, 1998).

Changes in persistence rates for postsecondary institutions vary across different types of institutions but were relatively stable across time. Public research institutions have increased persistence rates between 1983 and 1995 by just over 1.5%. Private baccalaureate degree granting institutions show persistence rates declining by just under 3% for the same period of time. Public two-year institutions experienced a nearly flat trend in freshman to sophomore persistence rates from 1983 to 1995 with a very small decline of 0.7%. The standard deviations for these data are lowest for highly selective institutions and the highest for open institutions (Mortenson, 1996).

Continued Enrollment and Completion

Continued enrollment and completion at colleges and universities are important topics for leaders in higher education. Many studies have viewed both continued enrollment and completion of a baccalaureate degree as criteria for identifying student success (Bean & Metzner, 1985; Bers & Smith, 1991; Grubb, 1991; Pascarella and Terenzini, 1991; Velez, 1985; Voorhees, 1987; Whitaker & Pascarella, 1994). Researchers have searched for factors that may have significant relationships to these criteria for student success and, in turn, how these factors can be affected or lead to interventions supportive of students.

A study by Smith (1994) used Tinto's model to search for relationships between academic and social integration and persistence and educational attainment. However, Smith concentrated on community colleges rather than four-year institutions. He found that the complex academic and social integration, attainment, and persistence issues at four-year institutions were equally complex for students at community colleges.

Rickinson (1996) collected data on the experience of students withdrawing from a four-year institution during the students' first, second, or third years. While initial information from surveys returned by mail indicated course-related reasons for withdrawal, follow-up telephone interviews revealed difficulties with academic and social/personal adjustment. The author concluded that the data supported Tinto's model of integration.

Some studies have focused on community college students to compare rates of student achievement with students from other institutions. Alba and Lavin (1981) studied

rates of baccalaureate degree completion for students in the two-year system of the City University of New York. They found that students who initially entered community colleges were nearly half as likely to earn a baccalaureate degree as those who first entered a four-year institution. Grubb (1991) analyzed transfer rates from two-year to four-year using data from the National Longitudinal Study of the Class of 1972 and the high school class of 1980--the High School and Beyond Study. Grubb found significant declines in transfer rates of community college students to four-year institutions. Dougherty (1994) attributed low baccalaureate degree attainment by community college students to poor academic preparation.

However, students who enter community colleges may have aspirations exclusive of baccalaureate degrees. While students enrolling in four-year institutions almost always intend to earn a baccalaureate degree, students enrolling in community colleges may intend to earn a degree--academic or vocational--without transferring, have no degree or certificate aspirations, or attend classes only for personal or employment upgrade purposes (Voorhees, 1997). This notion was supported by West (1993) when he stated that community college students increasingly selected courses that met personal goals and may not have wanted to transfer to a university.

Efforts to Promote Retention

Many colleges have initiated programs to assist students in developing the skills needed to be successful in completing a college program. Benefits of higher education accrue to individuals who take advantage of the opportunities available to enter into and complete higher education. Institutions of higher education have increased efforts to

promote retention because, in part, it is in the students' best interest (Bean & Metzner, 1985). In a study by Clark and Halpern (1993) the estimated value to a student in completing a baccalaureate degree can be in the millions of dollars over an average career. Notwithstanding, many individuals who enter higher education never complete baccalaureate degrees.

In a monograph edited by Joseph Hankin (1996) several authors described efforts the community colleges provide to support student access and success in higher education. This monograph's essays described orientation for student success, courses on college success, efforts to teach students to survive, and other institutional plans for student retention. This is an area of increasing importance to community colleges.

Numerous strategies have been attempted to address student success and help students in need. Some strategies are recommended to students once a problem appears or when a student selects available assistance. These strategies include student and/or faculty mentoring, instruction in technological assistance, counselor contact, small group assistance, and combination strategies. Other strategies are applied to all students without regard to any recognized need for improvement. These strategies include mandatory orientation and student assessment (Brawer, 1996; Crump and Dudley, 1996; Hankin, 1996; McCaffey & Miller, 1980; O'Banion, 1994b). Pre-enrollment assessments are used in many community colleges and one of the typically used instruments is the ASSET test. One study found that while scores on the ASSET test are used to place students in college-level or developmental-level classes, the ASSET scores are not strong predictors of student success in English composition (Hughes & Nelson, 1991).

Grunder and Hellmich (1996) studied the relationship between a formal, yet voluntary, student success (assistance) program and course failure, withdrawal rate, and GPA with mixed results. The study showed some significance for specific gender or ethnicity and participation in only one portion of program, but no significant relationships when students participated in all parts of the program.

Summary of Student Academic Achievement and Persistence

Academic achievement and persistence are necessary for the opportunities afforded by higher education to be realized. However, a large and significant number of students entering higher education never complete. Grades, academic satisfaction, social integration, full-time status, participation in student success programs, and identification of difficulties helped both academic achievement and persistence. Use of GPA has shown mixed results. High school GPA has not been a strong indicator of college academic achievement while previous college GPA has shown positive relationships. Persistence has been related to the degree of integration of a student in the higher education institution as well as emotional, health, and other factors. Previous research strongly points to the need for early detection and intervention since students who do not persist usually withdraw during the very first semesters and many times without benefit of counseling or guidance from faculty or other support mechanisms.

Many factors influence retention and success. Some of these factors can be affected by colleges. For example, academic satisfaction with the college and classes has connections to grades, which has connections to retention. Students who risk dropping out must be identified as early as possible since persistence rates for some institutions are

less than 60% and at times the student's decision to withdraw is made before the end of their first semester. While the academic goals of community college students may not include attaining a baccalaureate degree, community colleges are striving to increase the retention and success of students as they attempt to reach personal and career goals.

Efforts to promote retention include orientations, college success courses and workshops, counseling and advising, and combinations of strategies. At some colleges, student participation is mandatory.

Communication Apprehension Related to Student Outcomes

Some indicators exist pointing to characteristics of those students who are successful in college and those who are not. While some student characteristics are beyond an institution's control, Tinto (1987, p. 5) asserted "the key to successful student retention lies with the institution, in its faculty and staff." Fralick (1993) found students who are at a higher than normal risk for failure to achieve can be identified and assisted. Roueche and Archer (1979) strongly asserted the need for effective assessment when they stated, "Unless we can determine the readiness of students who enter our community colleges for college reaming, we cannot continue to claim to be open door institutions. Programmed failure for the high risk students makes the open door a cruel irony" (p. 26).

One aspect of student behavior related to college success, communication apprehension (CA) has been studied for many years and is associated with stage fright and reticence. McCroskey (1982b) described CA as fear or anxiety of an individual in anticipation of communication with another person. Booth-Butterfield and Cottone (1991, p. 172) reported CA to be a "significant threat to communication effectiveness for many

students." In fact an estimated 16 to 20% of the college student population report high CA (McCroskey, 1977b; Phillips & Metzger, 1973). While it is recognized that students refrain from and fear talking for many reasons, and communication anxiety may be only one of many reasons, Horwitz & Young (1991) pointed to studies in educational settings where students with indicators of higher CA participate less in the classroom than students with lower CA. Horwitz & Young (1991) also found that high CA students are perceived by teachers and peers as less friendly and intelligent than students with lower CA despite research that shows no such intelligence differences. Further, students with indicators of higher CA have lower participation rates in many college activities.

Communication Apprehension and Student Outcomes

Communication apprehension (CA) is described as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person" (McCroskey, 1984a, p. 13). High CA is related to many student behaviors including a decreased inclination to enroll in college (Monroe & Borzi, 1988), lower self-perception of communication competency (Ratcliff, Clyde, & Poyner 1996), diminished retention rates (Ericson & Gardner, 1992), and decreased academic achievement (Ericson & Gardner, 1992; McCroskey, Booth-Butterfield, & Payne, 1989). High communication apprehension is a category describing individuals who score higher than 80 on the PRCA-24 (McCroskey, Booth-Butterfield, & Payne, 1989).

Hamilton and Frerichs (1996) found evidence that suggested four-year college students with high CA scores are more likely to be non-persisters than are those with lower communication anxiety scores. McCroskey (1984a) noted that CA has behavioral

implications. Typical behavioral response to CA involves avoidance, withdrawal, and disruption. Booth-Butterfield & Thomas (1995) reported typical classroom behaviors of high CA students include absence of eye contact with the teacher, low rates of volunteering to answer questions, and avoidance of certain instructors known for class participation. The concern for higher education may be significant because the Hamilton and Frerichs (1996) study showed that many students with high CA scores might drop out prior to the end of the semester, allowing for little time to recognize student need and provide assistance.

Other behaviors of those with high CA include a finding a friend to help complete course projects, enrolling in subsequent classes with that friend, setting in the back of the classroom, and avoid or drop classes with instructors expecting extensive class participation. Some students fitting this description have avoided asking for assistance to the extent that they perform less well on assignments and tests (Booth-Butterfield & Thomas, 1995).

Further, Richmond and McCroskey (1985) and Booth-Butterfield and Thomas (1995) found evidence that high levels of communication apprehension may influence the choice of career options in some students. If this is true, students with high CA may be eliminating or avoiding very positive and rewarding career opportunities.

High communication anxiety is not a sole contributor to students' decisions to drop out of college. Nevertheless, it can be argued that appropriate action could provide some students with successful intervention. Successful intervention could lower the drop

out rate of students with high communication anxiety to a rate closer to that of students with low communication anxiety (McCroskey, Booth-Butterfield, & Payne, 1989).

Intervention Strategies for Communication Apprehension

It is possible that CA intervention could increase the success of more traditional college retention programs. Many of these programs attempt to involve students in communication with peers and faculty even though students with high levels of CA often find such programs more threatening than helpful. Although these methods have proven successful at four-year colleges and universities, they have not been demonstrated to be effective for community college students (McCroskey, 1984a). Further, systematic desensitization, cognitive restructuring, skills training, and positive imagery have all met with some success (Ayres, & Hopf, 1993; McCroskey, 1984a; Richmond & McCroskey, 1985).

Construct Focus

Initially, CA was conceptualized as "a broadly based anxiety related to oral communication" (McCroskey, 1970). This concept has evolved and is now viewed as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1977b, 1978). "Two conceptual modifications occurred. The first concerned the oral communication focus of CA and the other concerned whether CA was restricted to a trait conceptualization" (McCroskey, 1984a, p. 13). Although the CA construct now embodies nearly all modes of communication, the measures such as the Personal Report of Communication Apprehension (PRCA) address oral communication.

Communication Apprehension (CA) has been viewed as trait or traitlike on one extreme and situational or statelike on the other. However, McCroskey (1984a, p. 15) asserts that "this distinction has come to be viewed as a dichotomy, a false dichotomy. To view all human behavior as emanating from either a traitlike, personality orientation of the individual or from the statelike constraint of a situation ignores the powerful interaction of these two sources."

McCroskey (1984a) described four primary types of CA. First, traitlike CA is a relatively enduring, personality-type orientation toward a given mode of communication across a wide variety of contexts. It is distinguished by apprehension toward oral communication, written communication, and/or vocal-musical communication (singing). Second, generalized-context CA is a relatively enduring, personality-type orientation toward communication in a given type of context. Public speaking is illustrative of this type of CA. Individuals may show no other CA types. Third, personal-group CA is a relatively enduring orientation toward communication with a given person or group of people. It is a reaction of an individual toward a group or individual over the course of more than one circumstance. Fourth, situational CA is a transitory orientation toward communication with a given person or group. This is different from personal-group CA in that the person or group does not induce the apprehension as much as the situation. An example is that a student can relatively easily talk with a teacher or a group when initiating the question or topic, but becomes apprehensive when the teacher or group initiates and directs the discussion.

One additional type of CA is described as pathological. While every person, to one degree or another, is affected by CA, the person who never experiences CA in any communication is regarded as pathological as is the person who always experiences CA in any communication activity. These situations are extremely rare (McCroskey, 1984a).

The Personal Report of Communication Apprehension (PRCA-24)

To study any construct some mechanism to measure it must be available. The three typical methods of measurement are observation, assessments, and self-reports. Self-reporting is the most common method for CA. The most common self-report is the Personal Report of communication Apprehension or PRCA. This self-report instrument consists of 24 items (Horwitz & Young, 1991).

Communication Apprehension measurement was the focus of research since before 1960 (Clevenger, 1959). Many iterations of measurement instruments occurred. As a congitively experienced phenomenon, it is appropriate to measure trait CA with self-report measures. At one time separate instruments existed for college students, secondary tenth graders, secondary seventh graders, and for public speaking. In 1970 a general self-report instrument entitled the Personal Report of Communication Apprehension (PRCA) was first developed (McCroskey, 1970; McCroskey, 1977b). It has evolved, but remains based on the four communication contexts of public speaking, speaking in small groups, speaking in meetings, and speaking in dyads (McCroskey, Beatty, Kearney, & Plax, 1985).

McCroskey (1978) found that the PRCA-24 "(1) is capable of predicting behavior that is theoretically consistent with the construct of oral communication apprehension, (2)

is correlated with other personality variables at a level theoretically consistent with the communication apprehension construct, and (3) provides a measure of a stable characteristic of an individual that can be altered through substantial intervention." For example, the PRCA-24 contains statements to which individuals respond on a Likert Scale such as, "I dislike participating in group discussions," and "I have no fear of speaking up in conversations."

Validity and Reliability

McCroskey, Beatty, Kearney, and Plax (1985, p. 165) determined that, "The Personal Report of Communication Apprehension (PRCA) has evolved as the dominant instrument employed by both researchers and practitioners for measuring trait-like communication apprehension." Further, its construct and predictive validity as well as its cross-situational consistency is strong (McCroskey, 1978; McCroskey, 1984b; McCroskey & Richmond, 1982). In 1985, McCroskey, Beatty, Kearney, and Plax found that a data analysis using Pearson correlations to test the PRCA-24 supported the content validity of the PRCA-24 as a measure of communication apprehension across communication contexts.

McCroskey (1984b) concluded that many self-report instruments have good reliability. In particular, the PRCA-24 uses a 5-step, Likert-type response format of which the reliability is very high, usually above .90. Additionally, it correlates around .90 with other forms of the PRCA. "There is overwhelming evidence for the predictive validity of the measures (1984b, p. 92).

Conclusion

Community colleges serve unique populations within higher education, and the population it serves is closely identified with the community surrounding the community college. As open access institutions, the students are disproportionately more inclined to possess characteristics that have significant relationships with poor academic performance and poor persistence.

Communication apprehension is related to poor academic performance and poor persistence. In addition to the present models and indicators of students being at-risk, identification of CA characteristics may provide an additional tool for community colleges to use in identifying and intervening on behalf of at-risk students. This study is designed to determine the relationship, if any, between levels of CA and indicators of academic success--GPA--along with persistence to reenroll in the subsequent semester.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

Introduction

In pursuit of providing a better educational experience, institutions of higher education have routinely searched for strategies and methods for improvement. Community colleges, a part of the higher education delivery system that serves a unique group of students, face such a challenge even to a higher degree. Compared with four-year institutions, community college students are unique in that they are typically older, more likely to have delayed their entry into higher education, and generally come from a lower socioeconomic status (Voorhees, 1997). Although research on higher education has focused primarily on four-year institutions, this study focused on students from community colleges.

One of the obligations of the leaders within institutions of higher education is to determine methods, strategies, and systems that encourage, support, and improve the success of individual students within that institution. Therefore, understanding factors that may affect student success and identifying areas that are amenable to effective intervention is very important. This study focused on the link between communication apprehension and student performance that may have some direct implication in terms of class completion, continued enrollment, and indicators of academic achievement such as grade point average.

Problem and Purposes Overview

The purpose of this study was to examine the role of communication apprehension in first-semester community college students' performance. It was anticipated that the study would identify an area that is within the institution's capacity to influence and which can promote student success. The study employed a research design to determine the degree to which indicators of communication apprehension predict student performance. Specifically, this study was designed to examine the relationships between level of student communication apprehension and student (a) class completion, (b) continued enrollment, and (c) academic achievement as indicated by the student's GPA, for first-semester students enrolling for the fall semester of 1998.

Definition of Key Terms

Academic Achievement--the quantitative measure of students' cumulative performance in classes indicated by grade point average (GPA) or course grades

Communication Apprehension--"an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1984a, p. 13).

Community College--any institution accredited to award the Associate in Arts or Associate in Science as its highest degree (Cohen & Brawer, 1996).

First-semester student--a student enrolling in college classes for the first time.

Persistence--the result of action taken by a student to re-enroll for the subsequent semester.

Research Questions

The research questions in this study focus on the relationships between communication apprehension and student performance. The literature suggested that the level of communication apprehension would be associated class completion. continued enrollment. and academic achievement. The six research questions are:

1. Is there a relationship between the reported level of communication apprehension and the ASSET reading and writing assessment scores among first-semester community college students?
2. Is there a relationship between the reported level of communication apprehension and academic achievement among first-semester community college students?
3. Is there a relationship between the reported level of communication apprehension and student completion of individual classes among first-semester community college students?
4. Is there a relationship between the reported level of student communication apprehension and persistence among first-semester community college students?
5. Is there some combination of academic student characteristics and an indicator of communications apprehension that can predict academic achievement?
6. Is there a combination of academic and demographic student characteristics that can predict student persistence?

Null Hypotheses for Statistical Testing

The hypotheses seek to determine the level of significance of the relationships between the level of communication apprehension and areas of student performance.

Ho1: There is no statistically significant relationship between the reported level of communication apprehension and the ASSET assessment scores among first-semester community college students.

Ho2: There is no statistically significant relationship between the reported level of communication apprehension and academic achievement among first-semester community college students.

Ho3: There is no statistically significant relationship between the reported level of communication apprehension and student completion ratio among first-semester community college students.

Ho4: There is no statistically significant relationship between the reported level of communication apprehension and student persistence among first-semester community college students

Ho5: There is no statistically significant combination of demographic student characteristics and communication apprehension score that can predict academic achievement.

Ho6: There is no statistically significant combination of academic and demographic student characteristics that can predict student persistence.

Description of Variables

Age was obtained from the academic database. It is a continuous variable.

Communication Apprehension was a measured and quantified by the PRCA-24 and is an independent variable in the study. This is a continuous variable.

Persistence was determined by a student enrolling or not enrolling for one or more classes in the spring semester of 1999. This nominal variable has two categories.

Academic achievement was determined by the student's GPA on a 0-4 point scale. This variable is continuous.

Completion ratio was variable measuring course completion determined by dividing the number of hours completed by a student by the number of hours attempted. This variable is continuous.

ASSET assessment score was determined by the ASSET assessment instrument for both reading and writing. These variables are continuous.

Gender was quantified for analysis purposes. This nominal variable has two categories.

Ethnicity was quantified for analysis purposes as either minority or non-minority. This nominal variable has two categories.

Population and Sample

The population consists of students who enrolled as first-semester students in the fall semester of 1998 at a large, Midwestern, multi-college, community college district. The sample consisted of students who attended pre-enrollment activities during the months of July and August and subsequently enrolled in classes. These students were offered the

opportunity to volunteer to complete the PRCA-24. During the orientation or first weeks of class, the students were asked for their voluntary participation in completing a 24-item survey.

Data Collection and Instrumentation

During the pre-enrollment activities conducted during the months of July and August and during the first few weeks of the semester, the PRCA-24 instrument was provided to students. Participants were informed that participation was voluntary. The Personal Report of Communication Apprehension (PRCA-24; McCroskey, 1978) scores for the students completing the instrument established an indication of each student's level of communication apprehension.

The PRCA-24, developed and updated by James C. McCroskey (1978, 1984b), was the instrument used to determine the level of communication apprehension exhibited by the first-semester students during the fall semester of 1997. This instrument operationalizes the construct of communication apprehension through 24 Likert-type statements (see Appendix A). Participants completed the instrument by indicating on a 5-point, Likert-type scale the degree to which each statement applies to their personal situation (e.g., strongly agree, agree, undecided, disagree, or strongly disagree). The validity of the PRCA-24 was found to be high when it substantially correlated with scores on a predispositional measure of communication apprehension at the $p < .001$ level (McCroskey, Beatty, Kearney, & Plax, 1985). Through tests of the second-order factor model the PRCA-24 has also been found to be reliable, alpha = .81 (Levine & McCroskey, 1990).

The Assessment of Student Skills for Entry and Transfer (ASSET) test from American College Testing Program (©1994) is designed as an educational advising, course placement, and retention-planning instrument. Its primary purpose is to serve students entering community and technical colleges (American College Testing, 1994).

The ASSET reading and writing assessment instruments were used for this study. These instruments are designed to be part of a guidance-oriented assessment program. The reliability of the ASSET tests has been evaluated using the Kuder-Richardson Formula 20. Using this reliability evaluation, the ASSET reading and the writing instruments were found to be .78 and .87 respectively.

Each student's communication apprehension was determined by the PRCA-24 (McCroskey, 1978). Student information for persistence, GPA, course withdrawal, and ASSET assessment scores classification as developmental or non-development was obtained through the college's student academic database.

Statistical Analysis

All data in the survey as well as grades, GPA, demographic, and enrollment data from the students' records were entered into the Statistical Package for the Social Sciences (SPSS). A 0.05 level of significant was used to test all hypotheses. To analyze the relationship between communication apprehension and persistence, academic performance, completion ratio, ASSET assessment scores in reading and writing, and demographic information, the following analytic procedures were used.

Relationships between communication apprehension and ASSET reading, ASSET writing, GPA, and completion ratio as described in hypotheses one through three involve

the relationship between two continuous variables. The Pearson product-moment correlation coefficient (r) was used to quantify and analyze the relationships between the variables as described in each hypothesis.

In hypothesis four, the independent variable, communication apprehension, is continuous while the dependent variable is nominal. An analysis of variance was used for this hypothesis. Analysis of variance was used to compare the amount of between-groups variance and indicated the potential for further analysis of a relationship.

In hypothesis five, the independent variables were age, ethnicity, gender, communication apprehension, and completion ratio. These involve both ratio and nominal variables. The dependent variable, GPA, is a continuous variable. A multiple regression was used to analyze the data for this hypothesis.

In hypothesis six, the independent variables were age, ethnicity, gender, GPA, completion ratio, and communication apprehension. These involve both ratio and nominal variables. The dependent variable, persistence, is a nominal variable. A discriminant function analysis was used to analyze the data for this hypothesis.

Summary

The independent variable for all hypotheses in this study was or included the CA score. Dependent variables depend on the particular hypothesis being tested. Research questions one through six are restated as hypotheses one through six.

In hypotheses one, two, and three, both the independent variable and the dependent variable were continuous variables. Therefore, the Pearson product-moment correlation coefficient (r) was used to test for significance. In hypothesis four, the

independent variable was continuous, however each dependent variable was a nominal, dichotomous variable. Therefore, an analysis of variance was used to test for significance. In hypothesis five, the independent variables were a combination of both continuous and nominal variables; the dependent variable was continuous. Therefore, a multiple regression analysis was used to test for significance. In hypothesis six, the independent variables were a combination of both continuous and nominal variables; the dependent variable was dichotomous. Therefore, a discriminant function analysis was used to test for significance.

CHAPTER IV

PRESENTATION OF FINDINGS

The topic of methods and strategies for improving student success is important to institutions of higher education. The analysis and findings from the hypotheses described in Chapter III are presented in this chapter. Presented here are (a) characteristics of the sample, the population, and comparison of the sample to the population, and (b) descriptions of the analyses and results. Each hypothesis is considered independently.

Data Analysis

Data in this study include information from the Metropolitan Community College District academic database and communication apprehension information from the Personal Report of Communication Apprehension (PRCA-24) survey instrument. The PRCA-24 data were keyed to the MCC academic database through the student identification numbers obtained from the survey instruments. The data were analyzed using The Statistical Package for the Social Sciences (SPSS Release 8.0). The variables used in this study include student age, gender, ethnicity, PRCA-24 scores, ASSET reading and ASSET writing, course completion ratio, academic achievement measured by GPA, and enrollment in the spring 1999 semester.

Student Demographic Characteristics: Age, Gender, and Ethnicity

All student demographic data were obtained from the MCC academic database through use of the student identification number. Age in the sample and the population ranged from 17 to over 45. Gender was quantified for the purpose of utility within the statistical software used in this study. The number 0 represented males and 1 represented

females. For the purposes of this study, ethnicity was viewed as a dichotomous variable. All minority students were grouped together to form non-minority and minority groups. Ethnicity was also quantified for purposes of analysis by SPSS. The number 0 represented non-minority and 1 represented minority.

PRCA-24 Survey Instrument Scores

The range of possible scores from the PRCA-24 is from 24 to 120 while the range for the sample data was from 24 to 111. A low score represents a low degree of communication apprehension. A high score represents a high degree of communication apprehension.

ASSET Reading and Writing Scores

MCC procedures require that essentially all students enrolling for the first time complete an assessment of reading and writing ability using the ASSET instrument. ASSET reading scores have a possible range of 23 to 53 with the sample ranging from a low of 25 to a high of 53. ASSET writing scores have a possible range of 23 to 54 with the sample ranging from a low of 27 to a high of 54.

Completion Ratio

The variable measuring course completion is actually a ratio. This ratio was determined by dividing the number of hours completed by a student by the number of hours attempted (e.g., a student attempting 15 hours, dropping a single 3 hour class and completing 12 hours would have a 0.8 value for this variable). The minimum possible score was 0.0 while the minimum score from the sample was 0.25. The maximum possible score and the maximum score in the sample was 1.0.

Academic Achievement Measured by GPA

Academic achievement for the purposes of this study is indicated by student GPA. This was measured by fall 1998 GPA on a scale of 0.0 to 4.0 with the sample ranging from 0.0 to 4.0.

Persistence

Persistence is indicated by a student enrolling in one or more classes for the subsequent semester. In this study, the subsequent semester was the spring 1999 semester.

Data Organization

The six hypotheses of this study were tested using bivariate Pearson's correlation, one-way analysis of variance, multiple regression, and discriminant function analysis. Prior to conducting analyses to test the null hypotheses, the demographic and academic data on students were obtained from The Metropolitan Community Colleges' student academic database. The data variables obtained were the student identification number, age, gender, ethnicity, ASSET writing score, ASSET reading score, hours attempted for fall 1998, hours earned for fall 1998, grade point average for fall 1998, and enrollment status for spring 1999. All the data were aggregated and placed into a Microsoft Excel file along with the students' communication apprehension (PRCA-24) scores. The completion ratio variable was calculated within the Excel spreadsheet by dividing the data elements in the hours earned for fall 1998 variable by the respective data elements from the hours attempted for fall 1998 variable. From this Microsoft Excel file, the data were imported into The Statistical Package for the Social Sciences for analysis.

Description of Population and Sample

The results of this research are based upon surveys collected from 367 students in the fall of 1998. From this original set of surveys, 355 surveys were complete and contained a valid student identification number in the academic database. These 335 students were reviewed to determine the date of their first semester enrollment. Of the 335 students, 229 attended as first semester students in the fall of 1998. This list of students was then reviewed to verify that ASSET reading and ASSET writing scores existed in the academic database. A total of 196 students had completed the PRCA-24 survey instrument, enrolled as first semester students for fall 1998, and had valid ASSET test scores in both reading and writing in the academic database. However, 25 of these students had no GPA in the database because they withdrew from all classes.

Consideration was given to assign a GPA of 0.00 to all students withdrawing from all classes and retaining a sample size of 196. This action would have increased the number of sample 0.00 GPA scores by 25 and noticeably affected the GPA measures. For example, if 25 0.00 GPA scores would have been included in the sample the mean GPA would have decreased and the standard deviation for GPA scores would have increased.

The assignment of 0.00 for a GPA score to students who withdrew from all classes was not made. Students who withdrew from all classes were removed from the sample. This action left a sample of n=171.

Demographic Characteristics

Of the 171 first semester students in the sample of this study, 40% were under 20 years of age, 46% were between 20 and 24 years of age and 14% were over 24 years of

age. Sixty-two percent of the first semester students who participated in this research project were female and 38% were male. In addition, a majority (71%) of the sample was non-minority and 29% were minorities.

Table 4.1 shows the distribution of MCC students for different populations and the sample by age group, gender, and ethnicity. As the table illustrates, the demographic characteristics of the sample (n = 171) in this research project do not closely resemble the demographic characteristics of either the population of first semester students who attended MCC during fall 1998 (N = 7,345) or the entire population of MCC students (N = 17,628) who attended during fall 1998. The sample in this study tended to be younger and more representative of minorities than either population. Because of these discrepancies between the demographic characteristics of these populations, any results generated from this research can not be generalized to either first semester MCC students who attended during fall 1998 or to the entire MCC student population who attended during fall 1998. The results of this research are unique to only the sample used in this study.

The following section outlines results of hypothesis testing. This study focused on six research questions. A significance level of 0.05 was used to test the null hypotheses. The first four questions asked to what extent a relationship exists between communication apprehension and other variables as determined by (a) the PRCA-24 and ASSET scores (both reading and writing), (b) the PRCA-24 and GPA, (c) the PRCA-24 and completion ratio, and (d) PRCA-24 and persistence of students to reenroll in classes the subsequent semester. The fifth and sixth questions asked if any combination of

variables in this study could predict student success as indicated by GPA and persistence, respectively.

Table 4.1

Comparison of Population and Sample Characteristics

Characteristic	A Fall 1998 MCC Population *N* = 17,628		B Fall 1998 First-time Population *N* = 7,345		C* Fall 1998 First-time Sample *n* = 171	
	N	%	*N*	%	*n*	%
Age group						
Less than 20	4,551	26	2,678	37	69	40
20 - 24	4,923	28	2,441	33	78	46
Older than 24	8,154	46	2,226	30	24	14
Gender						
Female	10,719	61	4,195	61	106	62
Male	6,909	39	3,150	39	65	38
Ethnicity						
Minority	3,950	22	1,475	22	50	29
Non-minority	13,678	78	5,870	78	121	71

*Column C represents a research sample from Column B students

Results Related to the Research Questions

Hypothesis Testing

Ho1: There is no statistically significant relationship between the reported level of communication apprehension and the ASSET assessment scores among first semester community college students.

A bivariate Pearson's correlation was used to determine if a significant relationship exists between PRCA-24 scores, measuring students' degree of communication apprehension, and either the ASSET reading skills score or the ASSET writing skills score. The PRCA-24 scores for this sample ranged from 24 to 111 with a mean PRCA-24 score of 63.91. The ASSET reading scores for this sample ranged from 25 to 53 with a mean score of 40.67. The ASSET writing scores for this sample range from 27 to 54 with a mean score of 40.42. Table 4.2 shows the minimum and maximum score, the mean score, and the standard deviation for the PRCA-24 score and the reading and writing ASSET skills test scores.

No statistically significant correlation was found between PRCA-24 score and either the ASSET reading skills or the ASSET writing skills scores. The Pearson's correlation coefficient between the PRCA-24 score and the ASSET reading skills score was .058 with a significance of .455. This failed to meet the pre-determined alpha level of .05; therefore the null hypothesis is retained.

The Pearson's correlation coefficient between the PRCA-24 score and the ASSET writing skills score was .098 with a significance of .200. This failed to meet the pre-determined alpha level of .05; therefore the null hypothesis is retained. Table 4.3 shows the Pearson's correlation coefficients and the number of students upon which this analysis was based.

Table 4.2

Descriptive Statistics for Communication Apprehension, Reading Skills and Writing Skills Scores

Score	Minimum	Maximum	Mean	Std. Dev.
PRCA-24	24.0	111.0	63.91	17.54
Reading	25.0	53.0	40.67	5.59
Writing	27.0	54.0	40.42	5.27

The number of students in the sample considered to have high communication apprehension was 28 or 16% of the sample. This was consistent with previous research finding approximately 16 to 20% of college students reported high CA (McCroskey, 1977b; Phillips & Metzger, 1973).

Table 4.3

Bivariate Pearson's Correlation Results
Communication Apprehension, ASSET Reading, and ASSET Writing Scores

Score	*N*	Pearson's Correlation Coefficient*
PRCA-24 with ASSET Reading	171	0.058
PRCA-24 with ASSET Writing	171	0.098

*Not significant at the .05 level

Figure 4.1 shows a scatterplot of the PRCA-24 score and the ASSET reading skills score. As the scatterplot illustrates there is no recognizable correlation between these two variables.

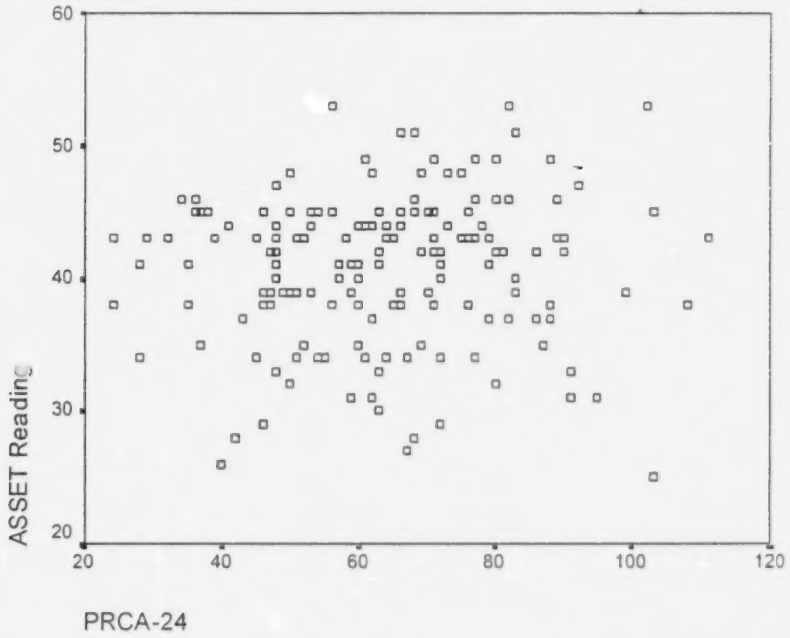

Figure 4.1 Scatterplot of Communication Apprehension score vs. ASSET reading skills score.

Figure 4.2 shows a scatterplot of the PRCA-24 score and the ASSET writing skills score. As the scatterplot illustrates there is no recognizable correlation between these two variables.

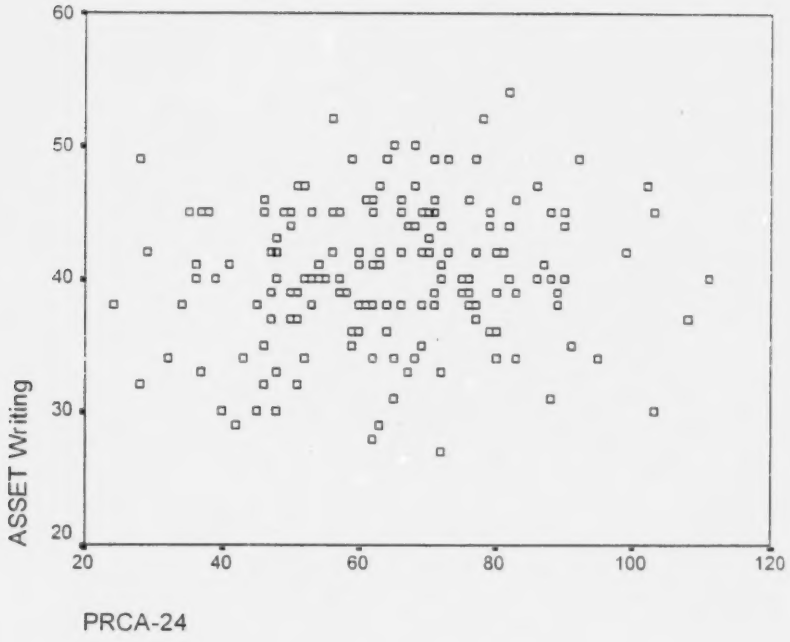

Figure 4.2 Scatterplot of Communication Apprehension score vs. ASSET writing skills score.

Ho2: There is no statistically significant relationship between the reported level of communication apprehension and academic achievement among first semester community college students.

A bivariate Pearson's correlation was used to determine the relationship between communication apprehension (PRCA-24) scores and academic achievement. Fall 1998 grade point averages were used to measure student academic achievement. The PRCA-24 scores for this sample range from 24.0 to 111.0 with a mean PRCA-24 score of 63.91. Fall 1998 grade point averages ranged from 0.00 to 4.00 with a mean grade point average of 2.26. Table 4.4 shows the minimum and maximum PRCA-24 score and grade point

average, the mean PRCA-24 score and grade point average, and the standard deviation for the PRCA-24 score and grade point average.

Table 4.4

Descriptive Statistics for Communication Apprehension and Student Grade Point Average

Score	Minimum	Maximum	Mean	Std. Dev.
PRCA-24	24.00	111.00	63.91	17.54
GPA	0.00	4.00	2.26	1.16

No statistically significant correlation was found between PRCA-24 score and student academic achievement as measured by student grade point average. The Pearson's correlation coefficient between the PRCA-24 score and grade point average was .112 with a significance of .14. This failed to reach the pre-determined alpha level of .05; therefore the null hypothesis is retained. Table 4.5 shows the Pearson's correlation coefficient and the number of students upon which this analysis was based.

Table 4.5

Bivariate Pearson's Correlation Results
Communication Apprehension and Student Grade Point Average

Score	*n*	Pearson's Correlation Coefficient*
PRCA-24 with GPA	171	.112

*Not significant at the .05 level

Figure 4.3 shows a scatterplot of the PRCA-24 score and student grade point average. As the scatterplot illustrates there is no recognizable correlation between these two variables.

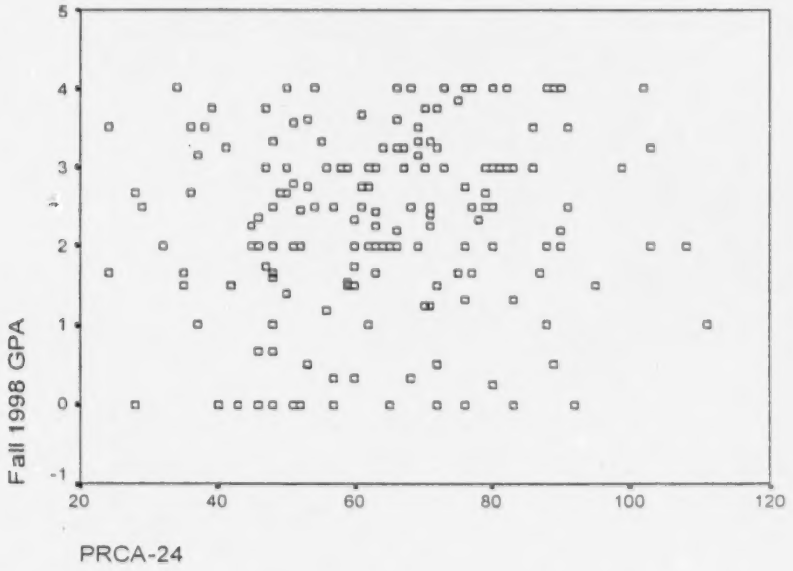

Figure 4.3 Scatterplot of Communication Apprehension score vs. student grade point average.

Ho3: There is no statistically significant relationship between the reported level of communication apprehension and student completion ratio among first semester community college students.

A bivariate Pearson's correlation was used to determine if any relationship exists between communication apprehension (PRCA-24) scores and student completion ratio. The completion ratio is the proportion of credit hours a student completed during the fall 1998 semester divided by the number of hours attempted. The PRCA-24 scores for this sample ranged from 24 to 111 with a mean PRCA-24 score of 63.91. The variable measuring the proportion of student completion ratio ranged from .25 to 1.00 with a mean of .87. Table 4.6 shows the minimum and maximum PRCA-24 score and completion ratio, the mean PRCA-24 score and completion ratio, and the standard deviation for the PRCA-24 score and completion ratio.

Table 4.6

Descriptive Statistics for Communication Apprehension and Student Completion Ratio

Score	Minimum	Maximum	Mean	Std. Dev.
PRCA-24	24.00	111.00	63.91	17.54
Completion Ratio	.25	1.00	.87	.21

No statistically significant relationship was found between PRCA-24 score and student completion ratio. The Pearson's correlation coefficient between the PRCA-24 score and student withdrawals was .023 with a significance of .76. This failed to reach the

pre-determined alpha of .05; therefore the null hypothesis is retained. Table 4.7 shows the Pearson's correlation coefficient and the number of students upon which this analysis was based.

Table 4.7

Bivariate Pearson's Correlation Results
Communication Apprehension and Student Completion Ratio

Score	*N*	Pearson's Correlation Coefficient*
PRCA-24 with Completion Ratio	171	.023

*Not significant at the .05 level

Figure 4.4 shows a scatterplot of the PRCA-24 score and student completion ratio. As the scatterplot illustrates there is no recognizable correlation between these two variables.

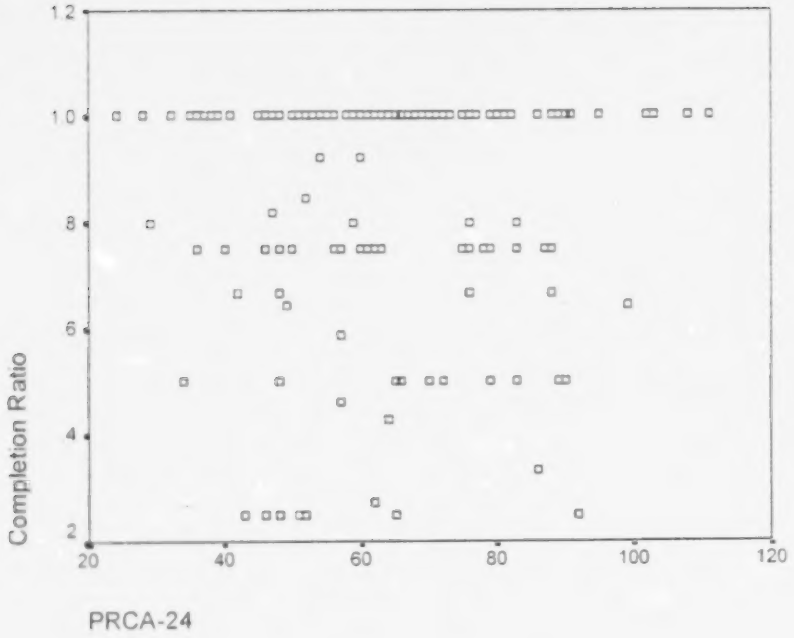

Figure 4.4 Scatterplot of Communication Apprehension score vs. student completion ratio.

> Ho4: There is no statistically significant relationship between the reported level of communication apprehension and student persistence among first semester community college students.

An analysis of variance was used to determine if a relationship exists between communication apprehension as measured by the PRCA-24 score and student persistence as measured by re-enrollment for the subsequent semester. Of the 171 students in this sample, 18% attended MCC during fall 1998 but did not re-enroll for spring 1999 and 82% attended MCC during fall 1998 and did re-enroll for spring 1999. The result of the analysis of variance does not reveal a statistically significant relationship between student persistence and PRCA-24 score. Students who did not persist had a mean PRCA-24 score

of 62.5 and students who did persist to spring 1999 had a mean PRCA-24 score of 64.2. The differences between these two mean scores were not statistically significantly different as measured by $F = .235$ with a significance of .629. This failed to reach the pre-determined alpha level of .05; therefore the null hypothesis is retained.

Table 4.8 shows the results of the one-way analysis of variance.

Table 4.8

Analysis of Variance Results:
Student Persistence and their Communication Apprehension Scores

Student Group	*n*	Mean	Std. Dev.	Std. Error	*F**
Not enrolled	30	62.50	20.07	3.66	.235
Enrolled	141	64.21	17.02	1.43	
Total	171	63.91	17.54	1.34	

*Not significant at the .05 level

Ho5: There is no statistically significant combination of demographic student characteristics and communication apprehension scores that can predict academic performance.

A multiple linear regression was used to analyze the data. Multiple linear regression was utilized in order to determine how accurately demographic data and communication apprehension score could predict academic performance as indicated by GPA. Independent variables included age, ethnicity, gender, completion ratio, and communication apprehension. The dependent variable was GPA.

The stepwise method was used to build the regression model for this hypothesis. The stepwise method is the most common method used to build a model (Norusis, 1997).

If the last variable entered into the model does not significantly add to the predictive power of the model, the variable is then removed from the model. If, however, the last variable entered into the model does significantly add to the predictive power of the model the variable remains in the model and any variables that are not longer significant after the new variable is entered are removed from the model. The students in this sample (n=171) ranged in age from 17 to 48 with a mean of 21.2 and standard deviation of 5.67. The completion ratio ranged from .25 to 1 with a mean of .87 and a standard deviation of .21. The communication apprehension (PRCA-24) scores ranged from 24 to 111 with a mean of 63.91 and a standard deviation of 17.54. Most were female (62%) and white (71%). Table 4.9 provides descriptive data for age, completion ration, communication apprehension, and GPA. Table 4.10 provides descriptive data for gender and ethnicity.

Table 4.9

Descriptive Statistics for Age, Completion Ratio, Communication Apprehension, and GPA

Variable	Minimum	Maximum	Mean	Std. Dev.
Age	17	48	21.74	5.67
Completion Ratio	.25	1	.87	.21
PRCA-24	24.0	111.0	63.91	17.16
GPA	0	4	2.26	1.16

Table 4.10

Descriptive Statistics for Gender and Ethnicity

Variable		Number	Percent
Gender			
	Female	106	62%
	Male	65	38%
Ethnicity			
	Minority	50	29%
	Non-Minority	121	71%

The coefficients of each of the independent variables in this regression model are listed in Table 4.11. In multiple regression, the partial regression coefficient for a variable tells how much of the value of the dependent variable changes when the value of a particular independent variable increases by 1 and the values of the other independent variables remain constant. A positive coefficient means that the predicted value of the dependent variable increases when the value of the independent variables increases. A negative coefficient means that the predicted value of the dependent variable decreases when the value of the independent variable increases. For example, in Table 4.11, step three, the coefficient for age indicates that GPA would increase by .034 for an increase of 1 in the age variable. Communication apprehension did not contribute significantly.

Table 4.11

Coefficients for Multiple Regression Model
Demographic Student Characteristics and Communication Apprehension to GPA

Step	Variable	B	Std. Error	Beta
1				
	Completion Ratio	2.354	0.374	0.436
2				
	Completion Ratio	2.223	0.371	0.411
	Age	0.037	0.014	0.181
3				
	Completion Ratio	2.186	0.367	0.405
	Age	0.034	0.014	0.168
	Gender	0.374	0.160	0.157

Note. *R* square = .190 for Step 1; .222 for Step 2; .246 for Step 3

As listed in table 4.11, completion ratio, age, and gender were significant predictor variables at the .05 level. Therefore, the null hypothesis is not retained. The *R* Square value for the variate containing the three variables in step three is .246. This number indicates that approximately 25% of the variance in GPA can be explained by the variate that includes completion ratio, age, and gender.

Age, in this analysis, should be viewed cautiously. Within the sample, age has a positive skew. To investigate if age was producing an inappropriate influence in the multiple regression analysis, the relationship between age and GPA was further investigated. A bivariate Pearson's correlation was used to determine the extent to which an independent relationship existed between age and GPA. A significant relationship

would support the multiple regression model in table 4.11. The ages for this sample range from 17 to 48 with a mean of 21.7. Fall 1998 grade point averages ranged from 0.00 to 4.00 with a mean grade point average of 2.26.

A statistically significant correlation was found between age and student academic achievement as measured by student grade point average. The Pearson's correlation coefficient between age and grade point average was .236 with a significance of .002. This lends support for the previously determined inclusion of age as a significant variable in the multiple regression model analysis of this hypothesis.

Ho6: There are no combinations of academic and demographic student characteristics that can predict student persistence.

Stepwise discriminant function analysis was used to determine what combinations, if any, of academic and demographic student characteristics can predict student persistence. In a discriminant function analysis, each case is classified into one of two groups constituting the dependent variable. The groups must be mutually exclusive and every case must be measured on the same set of independent variables (Klecka, 1980).

Similar to step-wise regression analysis, discriminant function analysis searches to find the most robust and efficient model for explaining and possibly predicting some phenomenon. In the present study, discriminant function analysis was the appropriate statistical technique since the criterion variable was dichotomous, that is, the phenomenon of the student either persisting or not persisting in enrollment within the community college.

In stepwise discriminant function analysis, each dependent variable is entered into the model separately. The process begins with the single variable having the greatest univariate discrimination then proceeds to test other variables. The discussion of Wilk's Lambda will describe how these variables are selected.

If the last variable entered into the model does not significantly add to the predictive power of the model the variable is then removed from the model. If however, the last variable entered into the model does significantly add to the predictive power of the model the variable remains in the model and any variables that are no longer significant after the new variable is entered are removed from the model. Six continuous academic and demographic variables were entered into the discriminant function analysis: PRCA-24 score, ASSET reading skills score, ASSET writing skills score, student completion ratio, student age, and student fall 1998 grade point average.

The results of the discriminant function analysis reveal three predictor variables of student persistence. The first step identified and used the variable of completion ratio. Next, fall 1998 grade point average was added. Third, student age was added. No further variables significantly strengthened the discrimination.

The increasing strength of discrimination is indicated by a decreasing value of Wilk's Lambda, which is an inverse statistic compared to *F* in other analyses. Therefore, a smaller value of Wilk's Lambda is stronger than a larger value of Wilk's lambda. The range of Wilk's Lambda is between 0 and 1 with values close to 0 indicating group means are different and values close to 1 indicating group means are similar. Wilk's Lambda is a multivariate measure of group differences over the discriminating variables and takes into

account the differences between the groups as well as homogeneity within the groups (Klecka, 1980).

Wilk's lambda provides an essential prerequisite analysis to discriminant function analysis. As mentioned earlier, it determines the selection of the initial potential predictor variables. Wilk's lambda identifies the strength of the univariate effect of each independent variable on the dependent variable. The variable with the strongest univariate effect is the first one chosen for the stepwise process.

Table 4.12 shows the steps taken through the stepwise analysis and which of the variables were determined to be significant predictors. Wilk's lambda is again used at each step to evaluate and select the next variable to be tested for significance by Wilk's lambda for inclusion. This table shows the corresponding, and strengthening, Wilk's Lambda at each step in the equation.

Table 4.12

Stepwise Discriminant Function Analysis Results

Step	Number of Variables	Wilk's Lambda*
1	1	.865
2	2	.815
3	3	.764

*Significant $p<.05$

Wilk's lambda is a measure of the difference between groups and can be converted to a Chi-square statistic that allows a significance test to be applied. In this

analysis. Wilk's lambda is .764 with a Chi-square of 45.010. This is significant at the .05 level. Therefore, the null hypothesis is not retained.

Within this study's view of student success and in particular (for this question) persistence, the variate developed from discriminant function analysis represents a dimension. At one end of the dimension is both completion ratio and GPA while at the other end is age, that is, this dimension can be thought of as a line. This line is defined by a point at one end that includes GPA and completion ratio. At the other end of this line is age. The locations of the endpoints of this line are called centroids. Their values are important and will be discussed later.

Discriminant function analysis seeks to weight each significant variable of the variate model (which for this analysis are age, completion ratio, and GPA; communication apprehension is not part of this model). The data from a given case will then be applied to the variate. The result is mathematically compared with the endpoints of the defined line. If the result is mathematically closer to the endpoint defined by GPA and completion ratio, the discriminant function places this case into the category of persistence. If, however, the result is mathematically closer to the endpoint defined by age, the discriminant function places the case into the category of non-persistence.

The strength of each variable in this variate is represented by coefficients. The coefficients from the discriminant function analysis cannot be considered individually and independent from one another. They are part of a variate that must be considered as a whole. Taken as a whole, the variate indicates that age has a negative relationship while

GPA and completion ratio have a positive relationship with the dependent variable persistence.

To discover the relative contributions of each of the individual variables, standardized coefficients are used. Standardized coefficients take into account the contributions of the other variables and allow for comparison from one to the other as if the original data all had a standard deviation of 1.0 (Klecka, 1980). The magnitude of the standardized coefficients is a relative indication of a particular variable's contribution to the function. As stated by Klecka (1980):

> While the unstandardized coefficients do tell us the *absolute* contribution of a variable in determining the discriminant score, this information may be misleading when the meaning of one unit change in the value of a variable is not the same from one variable to another (i.e., when the standard deviations are not the same). If we want to know the *relative* importance of the variable, we need to look at standardized coefficients. (p. 68)

The standardized coefficients provide information about the relative value of each variable in the variate. The unstandardized coefficients provide the information needed to make a discriminating calculation for a given case.

As shown in Table 4.13, the standardized discriminant function coefficients for age, completion ratio, and GPA are -.543, .562, and .682, respectively. This indicates that GPA has, relatively speaking, a slightly higher contribution to the function than either completion ratio or age which are relatively similar in magnitude. Note, however, that age has a negative coefficient, indicating that an increase in age has a negative contribution.

Table 4.13

Standardized Discriminant Function Coefficients

Variable	Standardized Coefficient
Age	-.543
Completion ratio	.562
GPA	.682

While the standardized coefficients are useful in describing the relative strength of each variable, problems can ensue when a strong relationship exists between two predictor variables. In an extreme case, where two predictor variables are perfectly correlated, once one of the predictor variables is used, the other cannot provide any additional discrimination. In this case, where the standardized coefficients can be misleading, structure coefficients can provide clarification. Structure coefficients are simple bivariate correlations that indicate the similarity between a single variable and a discriminant function. "As correlations, they can be considered to be the cosines for the angles formed by the variables and the function" (Klecka, 1980, p. 31). The structure coefficient, or cosine of the angle, indicates how closely a variable and the function are related. A large magnitude (near +1.0 or -1.0) indicates the function is carrying nearly the same information as the variable, while a small structure coefficient (near 0) shows the variable having little in common with the function (Klecka, 1980). As shown in Table 4.14, the structure coefficient for GPA is .713, the structure coefficient for completion ratio is .696, and the structure coefficient for age is -.226.

Table 4.14

Structure Coefficients

Variable	Structure Coefficient
Age	-.226
Completion ratio	.696
GPA	.713

Finally, the classification process of the discriminant function determines that an individual case most closely resembles one particular group as opposed to the other and classifies the case into that group. This occurs as the values of the variables for each case contribute information to the variate producing, in essence, a calculated distance between that individual case and each group as measured by each group's centroid or group mean.

As shown in Table 4.15, the sample data and the variate established a group centroid (group mean) for all cases not persisting at -1.2. For all cases persisting, the group centroid was established at 0.26. These group centroid values are standard deviations.

Table 4.15

Group Centroids

Group	Centroid
Not enrolled	-1.2
Enrolled	0.26

The numbers in Table 4.15 can be considered two points in a grid against which each of the individual cases of this study were plotted and relative distance to the centroids compared, resulting in classifications into one group or the other. The stepwise discriminant function analysis correctly classified 80.1% of the cases in this analysis.

As Table 4.16 shows, the stepwise discriminant function analysis was able to correctly classify 70.0% of the students who were not retained and 82.3% of the students who were retained based upon completion ratio, fall 1998 grade point average, and student age. This yielded an overall correct classification for the entire sample of just over 80%.

Table 4.16

Predicted Group Membership
Student Persistence

		Predicted Group Membership*	
Actual Group	*n*	Not Retained	Retained
Actual			
Not Retained	30	21	9
Retained	141	25	116
Percent Actual			
Not Retained	100.0	70.0	30.0
Retained	100.0	17.7	82.3

*This model correctly classified 80.1% of the sample.

Summary

The results of the study pointed to variables that indicated student success. One analysis identified variables that predict academic performance as measured by GPA. It was found that (a) completion ratio, (b) age, and (c) gender were significant in explaining approximately 25% of the variance of the academic performance variable.

A second analysis identified variables that predicted who would persist and those who would not persist by reenrolling in a subsequent semester. These predictor variables included (a) completion ratio, (b) GPA, and (c) age. Using these variables in the variate accounted for a correct prediction of over 80% of the cases in the sample.

Variables that were not shown to have significant predictive value for academic performance or persistence included communication apprehension (PRCA-24) scores and ASSET reading and writing scores. Further, the relationships between communication apprehension (PRCA-24) scores and each of the other academic and demographic variables were shown to be not significant.

There was no indication of a significant relationship between the communication apprehension and ASSET reading scores. Further, there was no indication of a significant relationship between the communication apprehension and ASSET writing score or academic performance as indicated by student GPA. Lastly, there was no indication of a significant relationship between the communication apprehension and course completion ratio or persistence.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

This study looked at how well the Personal Report of Communication Apprehension (PRCA-24), an indicator of communication apprehension, along with other student data, would predict two aspects of student success, academic achievement and persistence in a community college.

A rationale for this study was that communication apprehension could be quantified and incorporated into a model with predictive value for assisting institutions of higher education in supporting student success. Previous research indicated a relationship existed between academic achievement, persistence, and communication apprehension. For the students enrolled in four-year institutions, communication apprehension was found to have related significantly to indicators of student success (Booth-Butterfield & Thomas, 1995; Hamilton & Frerichs, 1996; McCroskey, Booth-Butterfield, & Payne, 1989). Elements from these previous studies revealed that high levels of communication apprehension were related to students who did not persist and who did not achieve well academically.

It was encouraging that some of the studies found positive results from interventions targeting communication apprehension; students with high levels of communication apprehension were capable of achieving some degree of relief from that apprehension. However, nearly all previous studies focused on the communication apprehension of students in baccalaureate degree granting institutions.

The findings of those studies cannot be automatically assumed applicable for community college students. Studies comparing community college students with students in four-year institutions have found that students attending community colleges are a different and distinct group within higher education in many ways. For example, community college students are demographically more representative of a community than are students attending four-year institutions (Adelman, 1992). As a group, community college students are older, more representative of minority groups, and delay initiating their higher education experience for a longer period of time after high school graduation (Cohen & Brawer, 1996; Voorhees, 1997). Because of the uniqueness of community college students, this study sought to determine if data would indicate a relationship between communication apprehension and student success for students entering a community college as previous studies had indicated for students attending four-year colleges and universities.

An instrument developed by James C. McCroskey, called the Personal Report of Communication Apprehension (PRCA-24), was used to quantify the level of communication apprehension for individual students. Information resulting from the PRCA-24 (McCroskey, 1978) and data collected from the academic database of the Metropolitan Community Colleges were analyzed. The results of these analyses were presented in chapter four.

The population for this study included all first semester students from four community colleges within one community college district in a metropolitan area. Students attending enrollment activities or the initial sessions of typically first-semester

classes (e.g., ENGL 101) were offered the opportunity to complete the PRCA-24 instrument. Approximately 350 surveys were returned.

The identification numbers from the surveys were matched to the academic database. Surveys with inaccurate or incomplete information were withdrawn. From the remaining group, individuals designated as first semester students were identified. This group constituted the sample. Data from the sample's surveys and the database were placed in an electronic file for analysis.

Summary of the Findings

Since the purpose of this study was to determine if communication apprehension could be valuable in predicting certain areas of student success, six research questions were developed to probe information related to communication apprehension and student success in community colleges. The PRCA-24 was used as a measure for communication apprehension.

While academic achievement and persistence were the focus for predictive models in this study, it was important to determine the extent of relationships between communication apprehension and other student characteristics. For example, identifying significant relationships among communication apprehension and the results of ASSET reading or ASSET writing assessment scores could be important in their own right as well as having implications to be considered in the search for predictive models. A significant relationship between communication apprehension and a standard assessment instrument such as ASSET could have pointed to a need for further exploration to address the value of communication apprehension as a significant contributor in student

assessment and advising. The research questions developed explored these and other relationships.

The first research question sought to determine if any significant relationship existed between communication apprehension and an assessment of students' skills and abilities typical of higher education institutions, that is, it sought to determine the relationship between the commonly used instruments to assess student readiness for collegiate-level courses and the instrument for quantifying communication apprehension. Assessment measures are typically used by four-year institutions to determine if a student should be enrolled. In community colleges, institutions with more open enrollment policies, the assessment measures are typically used to determine if a student is in need of developmental classes prior to enrolling in collegiate level courses.

In regard to question one, this study looked for significant relationships between communication apprehension and ASSET reading scores and a relationship between communication apprehension and ASSET writing scores. In this study, there was no significant relationship in either comparison. It appears that the pre-enrollment assessment of the reading and writing ability of students did not have any relationship with communication apprehension. These findings suggest that in these settings communication apprehension apparently was not related to some of the instruments or measures typically used to collect data to help in advising students. In essence, the communication apprehension instrument did not provide any information of consequence directly related to these currently used instruments. The null-hypothesis one was retained.

This result was not altogether surprising. While it was reasonable to believe that a group of students with high communication apprehension would be similar to a group of students who have low scores on assessment instruments, the two groups are not necessarily the same. It was also possible that a model predicting student success could be made stronger by including a communication apprehension variable in some combination with other variables. Research questions two, three, and four probed this possibility.

The second, third, and fourth research questions sought to determine the extent of direct, two-variable relationships between communication apprehension as one of the variables and each of three specified indicators of student success. One indicator, GPA, represented academic achievement. Another indicator of student progress, completion ratio, was measured by calculating the proportion of the number of hours completed compared to the number of hours enrolled. The third indicator measured persistence or enrolling in the subsequent semester.

In research question two, the data did not reveal a significant relationship between communication apprehension and academic achievement. Academic achievement was measured by GPA. So, the null-hypothesis two was retained.

This result was puzzling. Booth-Butterfield and Thomas (1995), Ericson and Gardner (1992), Hamilton and Frerichs (1996), McCroskey, Booth-Butterfield, and Payne (1989) all found significant relationships between communication apprehension and academic success. It raises the question as to why not in this study? While it is generally recognized that GPA is not a comprehensive indicator of academic success, the previous

research did show relationships between communication apprehension and academic achievement that were anticipated in this study.

Research question three continued looking at indictors of student success. This question compared communication apprehension to a completion ratio of current classes. Completion of classes was measured by dividing the total number of hours each student completed by the number in which each student was enrolled. This calculation yielded a completion ratio for each student.

There was no significant relationship between communication apprehension and the completion ratio; therefore, the null-hypothesis three was retained. While previous research had not used completion ratio as a variable, it was reasonable to expect that students with high communication apprehension might also drop one or more classes during the semester. After all, communication apprehension had been tied to poor academic performance, and poor academic performance is a reason for students to drop classes. Nevertheless, this study did not find a relationship between these two variables.

One of the more important student success indicators is persistence. Research question four looked for the relationship between communication apprehension and persistence—or students reenrolling in the next semester. One again, this study did not find a significant relationship between communication apprehension and persistence, and the null-hypothesis four was retained.

This finding seemed to contradict the results of previous studies such as McCroskey, Booth-Butterfield, and Payne (1989) and Monroe and Borzi (1998) who found a significant relationship to persistence. While community college students are not

identical to four-year college students, the complete lack of similarity in the findings here and in previous questions when compared with other research was somewhat puzzling. Perhaps there were other elements involved that this study did not take into account.

In research question five, a model was sought to predict academic achievement using demographic and academic data. While a model with significant predictive capabilities was developed, the model did not include communication apprehension as a variable influencing outcomes. The model developed included the three variables of completion ratio, age, and gender and accounted for about 25% of the variance for academic achievement as measured by GPA.

Looking at the results of the first four questions, it was not altogether surprising that communication apprehension was not included in the significant variables predicting academic achievement in question five. These results did, however, stimulate and encourage a search for additional elements that could account for the apparent discrepancies of this study when compared with other studies.

The last research question, number six, looked for a model that would predict persistence. Like the results of question five, a significant model was produced, but once again communication apprehension was not one of the significant predictor variables.

Three variables from the academic and demographic student characteristics were identified with moderately strong predictive power within the sample used in this study. The data from this study indicate that GPA, completion ratio, and age held moderately strong predictive value for persistence to enroll in the subsequent semester.

Discussion of Findings

This study had one clear conclusion: there is no relationship between communication apprehension and the variables studied. The results of each of the six research questions are perplexing. What could account for the obvious differences found in this study compared with previous studies? In an attempt to find some possible explanation, the construct of communication apprehension was reviewed and probed for additional information. One area deserved additional attention: intervention strategies that can alleviate the affects of communication apprehension.

When this study was initially designed, it was assumed that any significant relationships between low student success and communication apprehension would result in a recommendation for an appropriate intervention. What was not considered was that effective interventions may already be in place.

The differences in institutions and the experiences, backgrounds, and goals of students may account for some of the inconsistencies with previous research. Remember that in contrast with four-year institutions, community colleges concentrate on the first two years of higher education, raise the educational levels of under-prepared students, and focus on developing qualified, skilled workers (Griffith & Conner, 1994). Also, community colleges have a higher proportion of students who matriculate to higher education more than one year after high school (Voorhees, 1997) and who fit the description of occasional students who attend for *ad hoc* purposes and need accommodations for a variety of purposes in attending higher education classes (Adelman, 1992). Community colleges are generally open-access institutions serving

students with very diverse background characteristics. Students who would typically not be accepted at selective institutions of higher education are routinely enrolled at community colleges.

One possible explanation is that interventions may already be in place. Due, in part, to the unique variety of their students, community colleges already provide a unique environment in which higher education is pursued. Community colleges have established and expanded a variety of developmental programs for the purpose of supporting and assisting students (Burley, 1994). Mandatory assessment of students is prevalent among community colleges. From this assessment, many students are directed to support services and enrollment in appropriate level courses (Smittle, 1995), and if this were the case in the current study it would mediate the effects of communication apprehension.

Burley (1994) found that development programs with a strong theoretical base for students at community colleges resulted in generally positive effects for the students engaged in such services. A monograph edited by Joseph Hankin (1996) included descriptions by several contributors of the many efforts by community colleges to support student success including college success courses, extended orientation session, and college survival sessions. Other activities already instituted by community colleges include student and/or faculty mentoring, technological assistance, counselor contact, small group sessions, and combination strategies (Brawer, 1996; Crump & Dudley, 1996; Hankin, 1996; McCaffey & Miller, 1980; O'Banion, 1994b). In summary, the community colleges being examined may already have implemented the types of interventions

recognized as helpful in overcoming the affects of communication apprehension noted by McCroskey and others.

Students who were a part of the sample in this study enrolled in colleges where assessment could result in mandatory or recommended enrollment in developmental courses, mentoring, learning communities, supplemental instruction, and other means that could be categorized as interventions, interventions that are an integral part of the established system of student support services. These are similar to the types of interventions found to be useful in cases of high communication apprehension (Ayres, & Hopf, 1985, 1990; McCroskey, 1984a; Richmond & McCroskey, 1985). Indeed, McCroskey (1984a) found that successful interventions have included efforts to involve students in communication with peers and faculty. Therefore, it is conceivable and consistent with both previous research and the current study that students with high communication apprehension did not act in a way that maintained high relationships with indicators of poor achievement and persistence. This may be because the colleges in the current study already implemented intervention strategies that help students succeed and, in so doing, reduced the effect of communication apprehension.

Additionally, some courses require few speeches or other interactions that may intimidate individuals with high communication apprehension. Students with high communication apprehension tend to avoid circumstances, instructors, and classes that are known to require these interactions (Booth-Butterfield & Thomas, 1995; McCroskey, 1977a). Therefore, it is possible that some self-selection of courses by first semester students occurred for the avoiding certain courses.

Limitations to the Study

This study was limited by several factors. First, the sample in this study was a convenience sample from four colleges within one community college district. The sample was gathered through access to students as they became available in the summer of 1998 as they engaged in pre-enrollment activities and started attending classes for the fall semester. College personnel voluntarily distributed survey instruments at some of the pre-enrollment sessions. During the first days of the fall semester faculty members at all four colleges voluntarily distributed survey instruments to some of their English 101 and other typical first semester classes. One of these was a class that was part of a "learning communities" program. These efforts resulted in the initial pool that afterward yielded the research sample consisting of 171 students.

Another limitation is due to the ASSET assessment data requirement. Systematic biases may have existed toward degree-seeking or transfer students and away from certificate or non-degree seeking students. By eliminating students without ASSET assessment data, certificate or non-degree seeking students may have been excluded from the study in substantial ways that could affect results. The excluded students may have had high levels of communication apprehension.

The sample in this study was not representative of the general population of first semester community college students at the colleges participating in this study. The sample was compared to the population information in the joint academic database of the four colleges. Therefore, the information should not necessarily be viewed as indicative of other students attending these or other community colleges for their first semester. The

students in this study were older and more representative of minorities than the population of first semester students at the colleges where the study was conducted.

In addition, the size of the sample was not large. Not all students were able to complete the instrument, and from the initial group of students returning the PRCA-24 survey forms the actual sample size was further reduced. After a review for completeness, confirmation of identification in the college academic database, and selection of first-semester students only, a sample of just under 200 students remained. Furthermore, 25 of these students withdrew from all classes before the completion of the semester leaving an absence of data in the database for fall GPA. GPA was a critical element in much of the analysis—used as both an independent variable and a dependent variable among the hypotheses. To include these 25 students would have required using a completion ratio of zero and 25 completion ratio data elements of zero would have skewed the descriptive statistics. Thus, these students were dropped which caused a loss of all other data for each of these students and a reduction in the size of the sample. This reduced sample size also reduced the power of the statistical analyses. For comparison, additional analyses for all research questions were completed with the 25 students added to the sample. This exercise did not yield any results that were significant.

Persistence in this study was narrowly defined. The operational definition limited the number of students identified as persisting to those who reenrolled in one of the four colleges for the semester immediately following the fall semester when the survey and other data were collected. This definition did not allow students to be included who reenrolled in other institutions of higher education or who enrolled in a subsequent

semester following the defined spring semester. Community college students have a higher tendency to do this than do students in four-year institutions.

The time frame of this study resulted in a short and narrow window of tracking the sample. Demographic information, of course, would not change. However, the variables such as GPA, completion ratio, persistence were informed by a set of data confined to the reporting period of one semester. Over the course of an additional semester or semesters, the data for these variables could change and substantially affect the results of this study

In addition to the students who completed the survey instrument while attending enrollment activities prior to the first day of classes, other students completed the instrument during the first few days of the class. The classes selected for this distribution of the survey instruments were those typical of classes taken by first semester students such as English 101, Speech 101, etc. It is recognized, however, that some first semester students—some of whom may exhibit the characteristics of communication apprehension that was the focus of this study—delay enrolling in certain classes. A student taking English 101 or any of the other "typical" first semester courses during their second or third semester would have been eliminated from the sample because the academic data base would no longer identify them as first semester students. This factor is one for which the study was not controlled and could have reduced the number of students with high communication apprehension.

GPA and persistence, the primary indicators of student success in this study, are affected by many factors. Some of these include changes at work, at home, in personal health. This study did not control for any of these factors.

Recommendations for Further Study

Hypotheses one, two, three, and four found no significant relationship between data from the PRCA-24 and the ASSET reading, ASSET writing, GPA, completion ratio, or persistence. Therefore, the results of this study do not lead to recommendations for additional studies like this, although the force of this statement is moderated when the limitations are considered. Different sampling techniques or types of measures would be recommended.

The results do seem to suggest that there is not a simple monolithic relationship between communication apprehension and student success across contexts. If this is true, more sophisticated kinds of analyses may be needed. Future studies may need to include multiple institutions and multiple types of institutions. By including multiple institutions and multiple types, it would be possible to take into account institutional differences that may help explain and account for systemic student support and interventions already in place.

This more sophisticated type of study might include an analysis of characteristics of institutions of higher education in terms of an institution's student selectivity criteria. Nearly all community colleges are open enrollment institutions. While some four-year institutions do not restrict enrollment policies, many four-year institutions do have enrollment practices that are highly restrictive. Additionally, some four-year institutions

have sophisticated levels of assessment and advising like those described by community colleges.

Higher education institutions could be classified by how students are assessed, advised, and directed toward college-level or developmental courses rather than by the type of degrees they grant. Future research could then examine the relationship of communication apprehension to indicators of student success across the different type of institutions based on models of student advising. Some of the other elements that could be instructive to this type of study may include types of advisement recommendations, whether these advisements are mandatory or optional, whether students are simply informed about supplemental instructional assistance or are required to attend, and whether formal study assistance is developed as a routine part of a class or if it is left up to the initiatives of individual students. These and other types of support through counseling and advising offices may provide a more complex, yet richer and more accurate, model of the factors influencing student success. From such an expanded study, the variables used in this study could be brought into the analyses for further consideration.

Given that this study found no significance for communication apprehension in any of the questions and given the limitations of the sample and other parameters expressed previously, further studies that would take into consideration the activities and processes of an institution are recommended. This study produced unexpected results. Initially, some confirmation of the studies performed at four-year institutions was expected. When the statistical analysis yielded no such parallel relationships between

communication apprehension and the indicators of student success, considerable review of all facets of the study occurred.

That review revealed observations that may be even more insightful for student success within higher education than originally considered. Initially, it was not considered that intervention strategies that successfully impact communication apprehension might already exist. Studies that include information about strategies and procedures at the institutions where the students are being studied may lead to models pointing to the benefits of intervening procedures and activities.

The data from this study suggest more complex yet richer possibilities for encouraging student success. What appeared to be inconsistent with previous research may be found to be consistent with documented and documentable intervention strategies important for all students in higher education.

This study does offer the possibility that the student support strategies practiced by many community colleges may be addressing issues not previously identified. The strategies in use may have been created to solve a particular problem or need not widely recognized as related to communication apprehension, yet are now serving to ameliorate that same communication apprehension. Given these preliminary findings, one question that arises from this study may be, "What are the strategies common place in community colleges that may strengthen student success in all of higher education?"

APPENDIX A

Student Number (SSN) _____ - _____ - _____

DIRECTIONS: This instrument is composed of 24 statements concerning your feelings about communication with other people. Please indicate in the space provided the degree to which each statement applies to you by marking whether you (1) Strongly Agree, (2) Agree, (3) Are Undecided, (4) Disagree, or (5) Strongly Disagree with each statement. Please put the number of your response (from 1 to 5) in the space. There are no right or wrong answers. Many of the statements are similar to other statements. Do not be concerned about this. Work quickly; just record your first impression. Participation in this survey is voluntary.

_____ 1. I dislike participating in group discussions.
_____ 2. Generally, I am comfortable while participating in a group discussion.
_____ 3. I am tense and nervous while participating in group discussions.
_____ 4. I like to get involved in group discussions.
_____ 5. Engaging in a group discussion with new people makes me tense and nervous.
_____ 6. I am calm and relaxed while participating in group discussions.
_____ 7. Generally, I am nervous when I have to participate in a meeting.
_____ 8. Usually, I am calm and relaxed while participating in meetings.
_____ 9. I am very calm and relaxed when I am called upon to express an opinion in a meeting.
_____ 10. I am afraid to express myself at meetings.
_____ 11. Communicating at meetings usually makes me uncomfortable.
_____ 12. I am very relaxed when answering questions at a meeting.
_____ 13. While participating in a conversation with a new acquaintance, I feel very nervous.
_____ 14. I have no fear of speaking up in conversations.
_____ 15. Ordinarily I am very tense and nervous in conversations.
_____ 16. Ordinarily I am very calm and relaxed in conversations.
_____ 17. While conversing with a new acquaintance, I feel very relaxed.
_____ 18. I am afraid to speak up in conversations.
_____ 19. I have no fear of giving a speech.
_____ 20. Certain parts of my body feel very tense and rigid while giving a speech.
_____ 21. I fell relaxed while giving a speech.
_____ 22. My thoughts become confused and jumbled when I am giving a speech.
_____ 23. I face the prospect of giving a speech with confidence.
_____ 24. While giving a speech I get so nervous, I forget facts I really know.

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VITA

James D. Everett was born April 25, 1953, in Bethany, Missouri, to George D. and Edythe E. Everett. He has two sisters, Jeane L. Schweitzer and Lynda E. Foster. After attending public schools in Bethany, he received the following degrees: A.A.S. in Electronics from Maple Woods Community College at Kansas City, Missouri (1987); B.A. in Management from MidAmerica Nazarene University at Olathe, Kansas (1990); M.Ed. from MidAmerica Nazarene University at Olathe, Kansas (1991); Ed.D. from the University of Missouri-Columbia (1999). He married the former Linda M. Vaughn of Sedalia, Missouri, with whom he now has two daughters, Diane Marie and Melissa Kay. He is presently with the Metropolitan Community Colleges in Kansas City, Missouri.